

THE DOCK & HARBOUR AUTHORITY

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Editorial

The Port of Mersina.

The Port of Mersina, which is situated on the south coast of Turkey about 75 miles north of the island of Cyprus, forms the supplement for this month.

The port has always been an important one inasmuch as it is the Mediterranean sea outlet for Eastern Asia Minor and Persia, though the facilities at its disposal are quite inadequate to efficiently meet the demands of trade placed upon it.

At the present time five piers exist in the Port although they are all of small dimensions, the largest one, the Railway pier which was built in 1927 having a length of 152 metres.

These piers act as the trans-shipment point for goods imported and exported as ships calling there have to anchor anything from 700 to 1,700 metres from the shore and lighters of various dimensions are used as the means of trans-shipment.

For the purpose of meeting the continually increasing trade a scheme has been brought under consideration for the laying down of a new port and which allows for two piers each of a length of 250 metres and a breadth of 75 metres and which, with additional dredging, will enable vessels to lie alongside. This scheme is temporarily held up owing to the fact that the necessary financial means are not available. The total exports and imports in 1930 were nearly 200,000 tons, cotton being the chief commodity.

The Port of Aden.

In these days it is not often possible to point to a public administration which has been able to reduce its charges to the pre-war level, but this is very nearly the position in the case of the Port of Aden.

The present position from August 13th, 1932, when the Government of India approved of the abolition of the surtax on the scale of tolls, rates and charges, is as follows:—

- (a) Pilotage rates raised during the war to 100 per cent. over pre-war are now 25 per cent. below the pre-war rate.
- (b) Port dues raised during the war to 100 per cent. over pre-war are now 25 per cent. above the pre-war rate.
- (c) Tolls, rates and charges raised during the war to 100 per cent. over pre-war are now at the pre-war rates, with certain variations on some items to adjust to present conditions.

In spite of the inroads on the annual income of the port due to the progressive reductions, which have been made in the port charges, a large dredging project was undertaken on December 27th, 1928, and completed two years later at a cost of £266,850, which with the exception of a loan of Rs.12 lakhs (£90,000) from the Government of India was financed from reserve funds. This dredging work added about 4-ft. to the general depth of the mooring basin and approach channel and has made it possible to take the largest ships which call at the port at all states of the tide.

The development of a moderate-priced water supply from deep bore wells on the mainland by the Aden Settlement is a further improvement, which has added the facility of a cheaper potable water for the vessels using the port.

It is hoped in the future to make further concessions in the charges for port dues and by such progressive reductions in costs to retain the good-will of the shipping calling at the port.

Dock Improvement Scheme Completed at Goole.

An important scheme of dock improvement has been completed at Goole by the London, Midland and Scottish Railway by arrangement with the Aire and Calder Navigation, who are the owners of the docks at the West Riding port. The works carried out include a large shed, sidings and cranes on the north side of the West Dock. The shed is 500-ft. long by 75-ft. wide, and there are four sidings, two of which are under

cover, and in the centre there is an electric traverser passing over all four lines. There are also two sidings on the quay in front of the shed. Five 10-cwt. and one 5-ton longitudinal electric travelling cranes are in the shed, and a Customs examination room has been provided. The berthing accommodation for shipping has also been improved. The Aire and Calder Navigation have also recently made improvements and are now engaged on a comprehensive scheme of building a river training wall down to the confluence of the Ouse and Humber designed to facilitate access to the Port of Goole and improve the scour of the river. The half-yearly accounts presented to the directors for the January-June period, 1932, were such that the Board were enabled to declare an interim dividend on the ordinary stock of 2 per cent. less tax.

Approaching Completion of Work on Mersey Dock Estate.

Repairs, alterations and improvements, costing hundreds of thousands of pounds have been carried out on the Mersey Dock estate in the last few years and the process of modernisation is nearing completion so far as the scheme effects the short inter-borough communication link from Birkenhead to Seacombe, and the docks in the immediate vicinity. Old swing bridges which have served for fifty years have been, or are being, superseded, and their places taken by bascule bridges which will allow for the expeditious passage of pedestrians, ships, and vehicles. They will be completed in a few months time. The first of four rolling bridges, which will stand like giant robots on point duty, is almost ready for use. It will span the 100-ft. passage connecting the Egerton Dock and the East Float. While the finishing touches are being applied traffic will be diverted across the Duke Street bridge. Foot passengers from Birkenhead will be allowed to continue using the shorter route to Seacombe. Immediately this work is done, the second will be completed, but the third bridge will not be ready until February next year. The fourth one across Morpeth Dock passage is being built simultaneously with the others.

Wear Dues Question.

The imposition of the additional due of 1½d. per ton on the f.o.b. price of all coal loaded in the Wear is still agitating the members of the Wear Commission. The appeal of the Commissioners to the Durham Executive Board under the Coal Mines Act was unavailing.

At the August meeting of the Wear Commission the deputation appointed by them reported through the General Purposes Committee that they had had an interview with a committee of the Durham Executive Board which imposed an additional 1½d. per ton on the minimum f.o.b. price. The report continued: The case for the Commissioners was put by the Chairman (Mr. J. E. Dawson), Sir Walter Raine, the solicitor (Mr. R. S. Middleton) and the general manager (Mr. F. Humble), and after a very full discussion the committee promised to report the result to the Executive Board. A communication has since been received from the secretary to the Durham Executive Board that "The Board regret that they are unable to take any action in the matter."

The General Purposes and Finance Committee (the report added) have further considered the matter, realising that the Commissioners cannot allow the matter to remain in its present unsatisfactory state, and must continue their opposition to the resolution of the Durham Executive Board, which penalises all coal shipments on the Wear. The General Purposes and Finance Committee recommend that a formal complaint as to the resolution should be preferred to the Statutory Investigating Committee under the Coal Mines Act, and that further dealing in the matter be left in the hands of the original sub-committee of the Commissioners, viz.: the Chairman, Sir Walter Raine, the solicitor, the general manager. The committee's report was adopted.

THE formal opening by the Governor-General of Canada of the Welland Ship Canal took place at Thorold, Ontario, on August 6th, when the s.s. "Lemoyne," the largest freight steamer on the Great Lakes, passed through the canal carrying more than half a million bushels of wheat.

The waterway has a long history, for as far back as 253 years ago (in 1679) the explorer La Salle constructed above the Niagara Falls "The Griffin"—a vessel of 45 tons—which was the first sailing ship to navigate the Great Lakes. "The Griffin" sailed up Lakes Erie, Huron and Michigan. For 150 years thereafter only the birch bark canoe passed the great waterfall, but in 1829 a private company completed the first Welland Canal with 39 wooden locks capable of passing boats 100-ft. long and of 8-ft. draft. The second Welland Canal, completed in 1845, had 27 locks and a 9-ft. draft. The third Welland Canal, begun in 1871, had 26 locks and was capable of accommodating ships 250-ft. long with 14-ft. draft. Thus, until the completion of the fourth canal recently opened, the large freight steamers, some of them over 600-ft. in length, which carry coal, iron ore and grain from Fort William-Port Arthur on Lake Superior to the ports of Buffalo and Port Colborne on Lake Erie were unable to pass through to Lake Ontario.

One of the largest of these vessels, the s.s. "Lemoyne," has a gross tonnage of 10,480 tons, a length of 633-ft., beam of 70-ft. and depth of 29-ft. When passing through the new Welland Ship Canal on the opening day the "Lemoyne" was carrying 530,000 bushels (15,900 tons) of wheat for delivery at Kingston. The third Welland Canal could accommodate steamers carrying only about 100,000 bushels. These large freighters are now able to proceed 1,030 miles from the head of the lakes to the ports of Kingston or Prescott, Ontario, on the St. Lawrence River, whereas the previous range was restricted to 850 miles only, terminating at the lower end of Lake Erie. The s.s. "Lemoyne" in May, 1930, loaded 571,885 bushels of wheat, representing the crop from approximately 40,000 acres of Western Canada land. In the same month the

The locks on the Welland Ship Canal are, however, capable of accommodating larger vessels than the "Lemoyne," being 859-ft. in length (representing a useable length of 820-ft.), a useable width of 80-ft. and depth on sills of 30-ft. The canal itself has a width on the bottom of the prism of 200-ft. and at water line of 310-ft. The lift locks are placed in the major portion of the canal from the town of Thorold northwards to Lake Ontario, a distance of about 17 miles. The section south of Thorold to Lake Erie is on the upper plateau and is free from locks except for the guard lock (No. 8) protecting the Lake Erie end of the canal, this lock being the longest in the world with a length of 1,380-ft. The function of the guard lock is to maintain a constant water level in the summit reach of the canal.

The waterway descends the face of the escarpment in a direct line. The high lifts—46½-ft. for each of the locks—are unprecedented in canal construction. Numbers 4, 5 and 6 have been constructed in duplicate, enabling ships to pass up and down simultaneously. They are similar to the Gatun Locks of the Panama Canal, but are of somewhat larger dimensions, the lift of 139½-ft. for the three pairs of locks comparing with an aggregate lift of 85-ft. at the Panama Canal. Numbers 1, 2 and 3 locks, which are single locks below the escarpment, and No. 7, above the three twin locks, complete the entire lift of 325-ft. from Lake Ontario to the summit level, but with only 7 lift locks to pass (or a total of 8, including the guard lock), as compared with 26 locks on the older Welland Canal, navigation is considerably expedited. It is estimated that each of the locks can be filled in eight minutes, and the time necessary for the passage of a vessel through the entire canal is calculated at 8 hours normally. Nevertheless, the 25 miles of canal from Lake Erie to Lake Ontario have already been navigated in as little as six hours and ten minutes. During the passage of a vessel 21 railway and highway bridges have to be raised. The entire operation of the lock and bridge machinery is electrical, and the connected motor load, including the Government grain elevator at Port Colborne, is 15,300 h.p.

Surveys for the giant public undertaking which constitutes the completed Ship Canal were commenced in 1908 and completed in 1912. Construction commenced in 1913, or 19 years ago, but was interrupted by Canada's participation in the Great War. The canal came partially into use for down-bound traffic in September, 1930, and with the opening of navigation in 1931 traffic was permitted in both directions. Progressively larger and larger vessels and cargoes have been permitted, until to-day the Ship Canal can accommodate any vessel on the Great Lakes.

At the meeting of the Trustees of the Port of Bombay held on August 9th, 1932, the following main items of business were disposed of:—

Subject to the necessary sanction of Government, the Trustees decided that the surtax of 50 per cent. levied on the rates chargeable at the docks and Bunders should be absorbed in the relative scales of rates with effect from October 1st, 1932. Except for a temporary reduction three years ago, the existing surtax has been part and parcel of the schedule of rates for the past 10 years; it represented the inevitable post-war increase which all ports were forced to levy and which the majority absorbed in their scale of charges at the time.

In connection with the present revision of the schedule of rates, the Trustees have provided for a reduction in the wharfrage on dates packed in cases or boxes, and in the rate for shovels, spades, pickaxes and hoes, it having been represented that the special wharfrage rates on these items were unduly heavy in comparison with the tonnage rates on similar commodities. It was accordingly decided to classify dates under one general heading, irrespective of packing, at Rs.2-4-0 per ton, inclusive of surtax, and shovels, spades, etc., under the general head of hardware, ironmongery and agricultural implements at Rs.3-6-0 per ton inclusive of surtax.

Imports and exports at the Port of Bombay for the quarters ended June 30th, 1931 and 1932 respectively were as follow :—

	1931 Quarter ended 30th June			1932 Quarter ended 30th June		
	Import Tons	Export Tons	Total Tons	Import Tons	Export Tons	Total Tons
Docks ...	530,088	510,204	1,040,292	444,945	319,797	764,742
" (trans-shipment)	18,857	26,807	45,664	24,777	29,302	54,079
Bundlers	254,197	67,724	321,921	266,072	56,945	322,417
Total from 1st April to 30th June	803,142	604,735	1,407,877	735,794	405,444	1,141,298

Vessels, other than ferry steamers, hired transports, Government vessels and country craft, which entered and left the Port of Bombay were as follow :—

	1931 Quarter ended 30th June		1932 Quarter ended 30th June	
(A) ENTERED	No.	Nett Register Tonnage	No.	Nett Register Tonnage
Vessels engaged in foreign trade	213	812,623	208	902,089
" " " coasting trade	511	460,700	490	517,288
Total from 1st April to 30th June	724	1,273,323	698	1,419,377
(B) CLEARED				
Vessels engaged in foreign trade	171	678,583	179	786,722
" " " coasting trade	544	612,754	483	585,786
Total from 1st April to 30th June	715	1,291,337	662	1,372,508

The number of vessels that entered or cleared in the first six months of 1982 was 2,050, as against 2,056 in the first six months of 1981. The movement of goods amounted to 3,772,009 tons (imports 3,430,618, exports 341,391), as against 4,447,950 tons (imports 4,048,828, exports 399,122). Thus, whereas the number of vessels shows little change, traffic in goods has fallen by 675,941 tons from one year to the other. This result is attributed partly to the crisis in freights and partly to restrictions on the importation of coal and timber. Imports of the former amounted to no more than 1,706,336 tons, and those of the latter fell to less than 50 per cent. of the average for the last three years. On the other hand, there was a rise in imports of hydrocarbides, cereals and fertilisers.

Clyde Navigation Trust

Annual Accounts

Heavy Loss in Revenue

IF any evidence was required as to the depressed state of trade in the heavy industries in Scotland, such is unfortunately all too inadequately provided in the results announced at the annual meeting of the Clyde Trust held on September 6th.

For the first time in its history it records a deficit of over £6,000, a decrease in revenue over that of the previous year of £97,156, a decrease of 1,174,506 tons in the tonnage of vessels entering and leaving the port and a reduction of nearly 600,000 tons in the tonnage of the goods imported and exported. These figures are in themselves a striking testimony of the condition of affairs in the iron, coal, steel and heavy industries in that area, a condition which, unhappily at the moment, shows but little sign of improvement.

To meet this position the Clyde Trust have introduced economies on the one hand and on the other they are taking every possible step to develop trade in other directions to offset the heavy loss experienced, particularly in their coal and iron ore trade, which has featured so prominently in the port's progress in past years.

£6,000 Shortage.

In submitting the accounts at the annual meeting, Mr. Alexander Kennedy, convener of the Finance Committee, said that the revenue had been affected by the depression, which had increased in its world-wide incidence in the past year. The revenue for the year was £768,319, against £865,475 in the previous year, a decrease of £97,156. The expenditure charged to revenue was £774,606, a reduction of £81,843.

The revenue thus fell short of the expenditure by £6,287. This sum had been met out of reserve and depreciation account, which now stood at £1,651,211. This was the first time that the account had shown a deficit, and it was a matter of regret that it was so, even although the amount was small.

The Sinking Fund and Reserve and Depreciation Accounts amounted together to £3,335,742.

Decrease in Tonnage.

The tonnage of vessels entering and leaving the port totalled 12,584,687, a decrease on the previous year of 1,174,506 tons. The tonnage of goods, imported and exported, was 5,669,505, a decrease on the previous year of 593,078 tons.

Mr. Kennedy directed attention to two particular items of expenditure—the amount paid in interest including feu duties, which came to £383,410, and the sum of the weekly wages amounting to £231,854, together making £615,264. These two charges, he added, constituted almost 79 per cent. of the whole expenditure.

There was an increase of £3,842 in the amount of interest on loans. Happily, they might look forward to cheaper money, and, as the great bulk of their borrowings were on three to five years' terms, there should be a gradually increasing saving per annum in that expenditure, amounting in a few years to a considerable sum.

In a reference to the Merklands lairage account, he pointed out that there was an increase in the revenue of £15,824, but against this there was an increase in the direct expenditure of £10,059. These increases were mainly the result of the Trustees having undertaken the feeding and tagging of the animals using the lairage. This work was carried out during the whole of the past year as against only five months in the preceding year.

Capital Expenditure.

The capital expenditure during the past year amounted to £153,244, to which was credited unemployment grants for assisted schemes and receipts from sales of plant, amounting together to £52,061, leaving a net total expenditure of £101,183.

The capital expenditure for the current financial year was estimated at £66,642, mainly for work connected with the reconstruction and widening of General Terminus Quay and Plantation Quay. From that sum there would fall to be deducted the unemployment grants estimated at £41,844, leaving a net expenditure of £24,798.

Idle Ships.

During the past year a sum of fully £84,000 was granted by the Trustees in Derating rebates from various dues and charges, which relief, it was hoped, had been of benefit to the trades concerned.

Anyone visiting the Firth of Clyde and seeing the number of vessels laid up there must realise how badly hit the shipping industry was at the present time. Indeed, in all the circumstances it was gratifying that the revenue of the Trust for the past year reached the proportions it did.

They had been fully alive to this decrease in the volume of trade, and every effort had been made throughout the year to regulate their expenditure to meet the fall in the revenue. This had been done with due regard to the interests of traders and without impairing the efficiency of the undertaking.

It was not possible to forecast in these times with any degree of accuracy what the future trade position would be, but it would be their duty to maintain the prestige of the Clyde. They were well equipped in every department of the undertaking to meet and give good service to a greatly increased trade when it came, as he confidently hoped and believed it would.

A Sound Undertaking.

The Chairman of the Trust (Mr. William F. Robertson) said he did not think it would surprise anyone who knew the conditions of trade in Glasgow and its neighbourhood during the year that there had been a substantial fall in the revenue of the port. He hoped it would be recognised that they had made a successful effort to reduce their expenditure in order to meet the position. In doing so they had had to ask their employees to accept a reduction in their remuneration, and on behalf of the Trustees he expressed their appreciation of the loyal way in which officials and workmen had met the situation.

In a comment upon the provision for capital expenditure in the current year, Mr. Robertson said that this was practically the last year of any serious contemplated expenditure in harbour development. It was expected that the Plantation and General Terminus reconstructions would be completed by the end of this year. They could, of course, have postponed that work, but they could not have done so without failing in their obligations to the Unemployment Grants Committee and losing the substantial assistance which they derived for the work from that source. When these reconstructions were carried out they would have at this part of the harbour modern berths with accommodation of some 24-ft. of water instead of 15-ft. The harbour quays generally would then be in sound condition, and the facilities of the port all over would be more efficient than they had been for a long time.

The Port of New Orleans

Ocean-going vessels arriving at the Port of New Orleans during July numbered 180, according to figures compiled by the Dock Board. There were 188 departures during the month. The ocean-going vessels arriving had a total gross tonnage of 774,637 tons. Ships using the public wharves totalled 656,814 gross tons. Cargo paying tollage amounted to 194,124 tons.

During the month 970,262 bunches of bananas were handled by the Board's conveyors.

Inland watercraft of over 25 tons, numbering 335 vessels, and having a total tonnage of 125,420 tons, arrived during July.

An increase was shown in the tonnage of vessels using the Inner Harbor-Navigation Canal. During the month 1,071 vessels, having a total of 415,295 tons, used this artery, an increase of 5,101 tons over July, 1931.

Substantial increases were shown by several of the commodities moving over the port's wharves. Vegetable food products exported increased 18,321 tons, textiles exported increased 5,175 tons, and vegetable products, other than food products, exported showed an increase of 674 tons.

Of the ocean-going vessels arriving during the month 107, having a total tonnage of 512,754 tons, were under American registry. This represented more than 59 per cent. of the ships and more than 66 per cent. of the total tonnage. Norway was second and Honduras third in number of ships and in tonnage.

Following is a tabulation showing nationality, number of ships and total tonnage of ocean-going vessels which arrived during the month:—

Nationality	No. of Vessels	Gross Tonnage
American ...	107	512,754
Brazilian ...	2	10,718
British ...	7	41,125
Danish ...	1	2,526
Dutch ...	2	17,666
German ...	4	12,726
Honduran ...	21	58,583
Italian ...	3	17,789
Japanese ...	3	21,900
Nicaraguan ...	2	1,991
Norwegian ...	24	60,372
Spanish ...	1	6,632
Swedish ...	3	9,855
	180	774,637

Recent Legal Decisions

IT is to be hoped that the recent decision of the House of Lords in *Northumbrian Shipping Co. v. McCullum*, 48 T.L.R. 568, will at length set at rest the vexed question of the right of compensation of a seaman, who, having been ashore on leave, meets with an accident on returning to his ship. It was held in *Stewart and Son v. Longhurst*, 1917, Appeal Cases, 249, that where an ordinary workman from the shore is engaged in some ship on a job and is injured within the Dock premises such an accident arises out of and in course of his employment, for his passage through the Docks exposed him to special risks which would not otherwise have arisen. But, as regards sailors themselves, what is the position? Where a seaman has been sent ashore to do an errand on the ship's business, then an accident happening to him falls within the statute, for it is owing to his employment and not to his own concerns that his exposure to the perils of the highways is due. But where a seaman is ashore on leave, whether quitting or returning to his ship, accidents to him are just those to which every member of the public is liable, but when he got back again to the proximity of the ship the special risk of his employment was thought to emerge and in some cases it was held that where a seaman fell off the quay he was still outwith his employment, but when he reached the gangway of the ship and fell off it he was within his employment.

These curious distinctions are now swept away by the decision mentioned which lays down the principle that a seaman who, on his way back to his ship, has left the public highway with those risks common to all wayfarers and has entered the private premises of the harbour in which his ship lies with its special risks to which only those who have business at the harbour are exposed comes within the protection of the Workmen's Compensation Act, for if he sustains an accident while using that access he sustains it by reason of risks incidental to his employment and which he would not have encountered but for his employment.

Wages earned by the master and crew of a salvaged ship after the salvage services had been rendered took priority over the salvage award in the distribution of the funds representing the proceeds of sale of the salvaged ship. It has just been held in the case of *The Mons*, 1932, T.L.R. 555, that the master's lien for disbursements stood on the same footing as his lien for wages and that therefore disbursements made to the master after the salvage services had priority over the salvage award. It is was held further that liens for disbursements made by successive masters ranked *pari passu* and not in the inverse order of their attachment.

A German firm supplied bunker coal to a Latvian ship under a contract which is said to confer upon them the status known to German law as that of "ship's creditors." The ship was subsequently arrested in England at the instances of other necessities' men and sold by order of the English Court. Further claims were brought against it by a mortgagee and other necessities' men and these, as well as the German firm, in due course obtained judgment against the proceeds of the sale of the ship. On the question of priority of these claims it was argued for the German suppliers of the bunker coal that the law applicable was the German Commercial Code by which the ship's creditors were given priority not only over other necessities' men, but also over a mortgagee and also

were given the equivalent of a maritime lien which entitled them to follow the ship or her proceeds into the hands of subsequent owners. It was decided, however (*The Sigurd* (1932) 48 T.L.R. 556) that any rights possessed by a claimant under German Law were of no value unless and until they were enforced by the arrest of the vessel in the German Courts and that otherwise the question of priority was to be determined by *lex fori* under which the claimants as necessities' men had no maritime lien or special rights over the heads of the mortgagee or other necessities' men.

In view of what the law is, there does not seem to us to be much, if anything, new or extraordinary in the Hull and Lowestoft Docks cases; indeed we do not see how the decisions could be other than they were. With the official reports now before us, let us endeavour here to state as succinctly and clearly as possible the legal points decided.

Taking first, then, the Hull case—*London and North Eastern Railway v. Chester and Son*, 1932, 48 T.L.R. 484—the plaintiff railway company owned the docks at Hull, and without being under any statutory obligation to do so, they granted by agreement to a member of the defendant firm a license which allowed him to maintain a hut on the docks in connection with his business there. The agreement was terminable by one month's notice but no such notice had been given. In an action for an injunction to prevent the defendants from sending vehicles on to the dock premises except on such conditions as the plaintiffs might lay down, it was held that as the license contemplated the use of vehicles for the removal of goods, the plaintiffs could not while the agreement continued interfere with the defendants' use of vehicles for the removal of their goods, unless owing to size, weight or other matters, there were reasons to object to the vehicles themselves, and also that under the Hull Dock Acts intending purchasers of defendants' goods had, apart from contract no right of access to the docks and could only go on the quays upon such conditions as the plaintiffs might impose.

Now in the Lowestoft case—*British Trawlers' Federation Ltd. and Others v. London and North Eastern Railway Co.*, 48 T.L.R. 491—the three plaintiffs there concerned, claimed against the railway company who owned the harbour and docks at Lowestoft a declaration that they were entitled without license or conditions to use motor vehicles for removing from the docks goods which they had purchased there. The first plaintiffs had no contractual relation with the defendants and had bought goods from the second plaintiff on the defendants' quay with notice of the conditions imposed by the defendants as to the licensing of vehicles. The second plaintiffs also had notice of the conditions. The third plaintiffs had with the defendants contracts under which they had an implied right to bring vehicles on to the dock premises for the removal of goods purchased by them at the docks. It was held that the defendant company was under no statutory duty to allow sales of goods to take place on the quay and might apart from contract attach to its permission such conditions as it pleased, including conditions as to the removal of the goods, that the first and second plaintiffs were bound by the conditions of which they had notice and that the third plaintiffs were entitled under contract to use vehicles free from the conditions which the defendants sought to impose.

Notes of the Month

The Institute of Transport.

The first ordinary meeting of the session 1932-33 will take place in the Lecture Theatre of the Institution of Electrical Engineers, Victoria Embankment, W.C.2, on Monday, October 10th, commencing at 5.30 p.m., when Sir David J. Owen will be inducted as President of the Institute and will deliver his inaugural address on the subject of "The Problem of Port Costs."

At the conclusion of the meeting the new President will hold an informal reception.

Weser River Shipping in July.

Water conditions on the Weser were very unfavourable during July, as barges were only able to proceed with very considerably limited freights during the whole of the month, and that only with the aid of water from the Edertal Reservoir.

A considerable decrease in goods traffic through the Bremen Weser Lock took place in July. Up-stream and down-stream together traffic through the lock only amounted to 106,600 tons. This is 18,300 tons, or 15 per cent., less than in June, and 53,700 tons, or one-third less than July, 1931. Compared

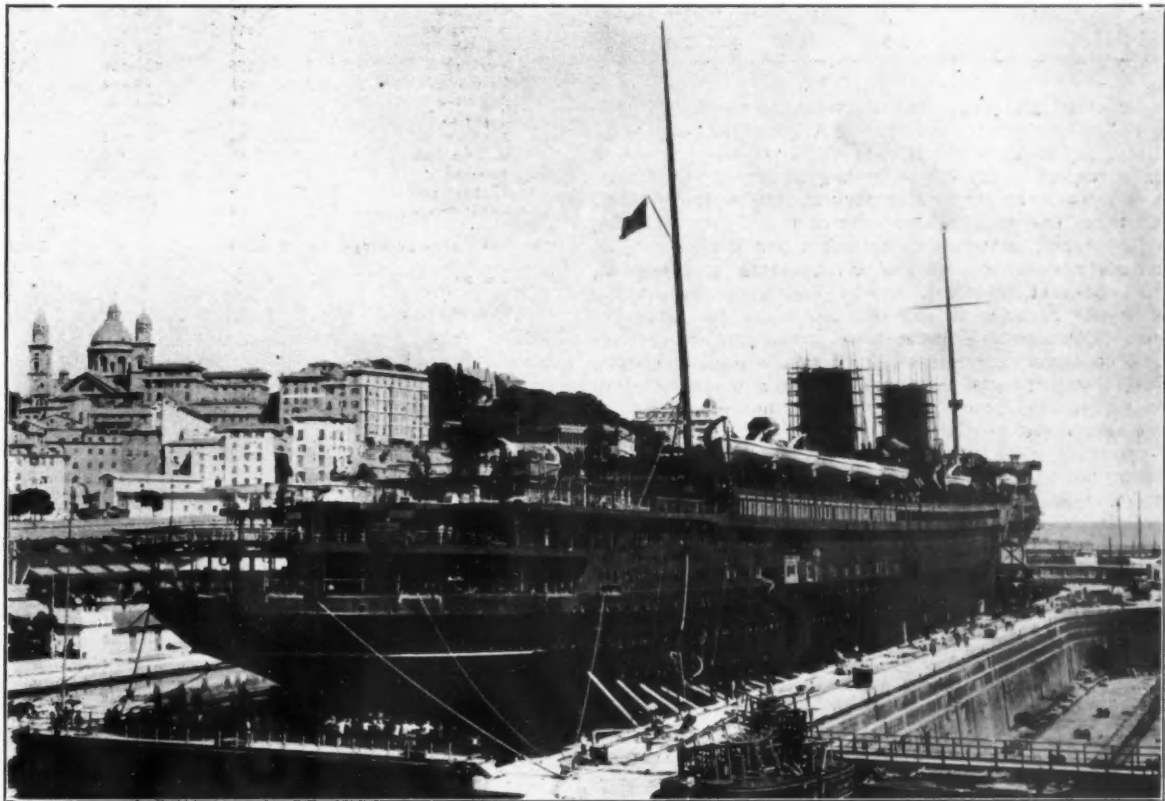
with the previous month, down-stream traffic with 82,000 tons only slightly decreased (1,600 tons less). A slight reduction in coal and potash transport partly balanced the small increase of gravel and stone shipments. Up-stream traffic, on the other hand, at 24,600 tons, showed a decrease of 16,700 tons, or 40 per cent., of which 13,900 tons fell to grain.

In the months January to July, 1932, altogether 730,300 tons were carried, against 897,400 tons in the same period of 1931. This is a decrease of 167,100 tons, or 19 per cent. However, only down-stream traffic bore the loss. This was 505,700 tons, 191,000 tons, or 27 per cent less, chiefly due to smaller transport of coal, gravel and stones and potash and salt. Up-stream goods traffic at 224,600 tons was 23,900 tons or 12 per cent. greater than in the previous year, as considerably larger quantities of grain went to the interior.

Gladstone Dock Record.

A record was made at Gladstone dry dock, Liverpool, a few days ago, when two vessels, the Blue Funnel liners "Agapenor" (4,798 tons and 473 feet long) and the "Nelens" (4,218 tons and 460 feet long) were housed at one time. The dock is 1,050 feet in length, and the two vessels, therefore, have plenty of space at each end of the dock. On many occasions the dock has accommodated steamers of 40,000 and 50,000 tons register.

Italian Harbour Affairs



The New Italian Liner "Rex" in the Alle Grazie Dock at Genoa.

This Vessel, which is of 51,000 tons gross and reached a speed of 28 knots on her recent trials, is now on her maiden voyage to New York.

ACCORDING to statistics which have just been published, shipping at Italian ports during the month of August, 1932, included the arrival of 21,090 ships representing 7,060,677 net register tons carrying 1,864,759 tons of goods and 559,284 passengers; and the clearance of 22,856 ships representing 7,053,957 n.r.t. carrying 711,609 tons of goods and 531,905 passengers. The total traffic at Italian ports during the month of August, 1932, was 43,946 ships representing 14,114,634 n.r.t. and carrying 2,576,368 tons of goods and 1,091,189 passengers. During the month of August, 1931, shipping at Italian ports included the arrival of 19,953 ships representing 6,786,846 n.r.t. unloading 2,097,140 tons of goods and 547,006 passengers, and the clearance of 19,842 ships representing 6,895,420 n.r.t. carrying 665,790 tons of goods and 526,503 passengers. The total traffic at Italian ports in August 1931 was 39,795 ships representing 13,682,266 n.r.t., with 2,762,930 tons of goods and 1,073,509 passengers. Both exports and the passenger trade have shown an increase in 1932 in respect to 1931, while imports have shown a decrease.

It is impossible to make a detailed study of the situation of shipping at Italian ports during the month of August, 1932, but the figures which have been published regarding the main items of imports during the period from January to July, 1932, are reproduced below:—

	COAL		WHEAT		COTTON	
	1932	1931	1932 (TONS)	1931	1932	1931
Genova	1,266,900	1,521,913	478,257	634,303	96,193	73,760
Savona	642,963	717,545	1,828	821	55	312
Leghorn	365,025	389,082	55,175	66,593	1,894	1,007
Civitavecchia*	295,613	372,602	45,715	50,382	—	—
Naples	368,930	422,846	229,979	314,829	4,557	4,160
Palermo	64,055	99,398	372	10,484	—	—
Catania	31,119	71,218	38,510	60,074	—	—
Trieste**	228,407	223,371	47,204	38,250	21,174	23,210
Fiume	9,484	29,984	16,973	5,959	939	815
Venice	533,919	693,809	196,604	128,765	29,236	23,840
Ancona	76,686	183,024	137,582	24,702	—	48
Bari	59,797	63,959	52,754	58,393	—	—

*January—June. **January—May.

Imports of coal have been showing a general drop at Italian ports, the only exception being Trieste, where there has been a slight improvement. In connection with the wheat trade there has been a decided improvement at the Italian Adriatic ports, while imports at Italian West Coast ports have shown a big drop. Cotton imports as a whole have shown a decided improvement.

In connection with the situation at each particular port the statistics, which have been published for the month of August, 1932, at Trieste may be resumed as follows:—

		1932 Centalis	August Centalis	1931 Centalis
ARRIVALS				
By rail	...	375,477		621,147
By sea	...	1,260,542		1,214,079
Total		1,636,019		1,835,226
CLEARANCES				
By rail	...	516,229		675,719
By sea	...	379,811		477,484
Total		896,040		1,153,203
TOTAL				
By rail	...	891,706		1,296,866
By sea	...	1,640,353		1,691,563
Total		2,532,059		2,988,429

The situation during the first eight months of 1932 may be summarized as follows:—

		Centalis	
ARRIVALS			
By rail	...	3,400,447	5,030,648
By sea	...	10,969,121	11,000,781
Total		14,369,568	16,031,429
CLEARANCES			
By rail	...	5,744,618	7,211,993
By sea	...	3,247,063	4,005,148
Total		8,991,681	11,217,141
TOTAL			
By rail	...	9,145,065	12,242,641
By sea	...	14,216,184	15,005,929
Total		23,361,249	27,248,570

Italian Harbour Affairs—continued

The Provveditorato al Porto di Venezia has published the following information regarding shipping at the above-mentioned port during the month of August, 1932:—

	Imports Tons	Exports Tons	Total Tons
August, 1932 ...	211,414	38,582	249,996
August, 1931 ...	206,501	32,980	239,481
	+ 4,913	+ 5,602	+ 10,515

It can be seen from the above figures that shipping in the port of Venice during the month of August has shown an increase of 10,515 tons of goods corresponding to 4.39 per cent. in respect to the corresponding month of 1931. The increase in imports reaches 4,913 tons corresponding to 2.37 per cent. and is due to larger arrivals of petrol (14,000 tons), metals (5,500 tons), construction materials and lumber (13,600 tons), cereals and oilseeds (3,100 tons), cotton (1,800 tons), and other goods (1,913 tons). There has been, however, a decrease in the arrivals of coal (25,700 tons) and chemical fertilizers (9,300 tons). Exports have shown an increase of 5,602 tons, corresponding to 16.9 per cent. in respect to 1931, due to larger shipments of pyrite ashes. As a whole shipping during the first eight months of 1932 has shown a decline of 13,040 tons corresponding to 0.68 per cent. in respect to the corresponding period of 1931.

It may be worth while to examine the figures for imports and exports at Italian ports during the first eight months of 1932 as outlined in the following schedule:—

	IMPORTS		EXPORTS	
	1932 Tons	1931 Tons	1932 Tons	1931 Tons
January ...	1,826,000	1,829,000	602,000	606,000
February ...	1,761,000	1,796,000	508,000	573,000
March ...	1,889,000	2,196,000	569,000	643,000
April ...	2,038,000	2,063,000	649,000	668,000
May ...	1,997,000	2,179,000	647,000	664,000
June ...	1,905,000	2,385,000	632,000	673,000
July ...	1,829,000	2,187,000	670,000	728,000
August ...	1,864,000	2,097,000	711,000	660,000

As a whole both imports and exports have been lower in 1932 in respect to 1931, but it must not be forgotten that exports during August have reached a figure even higher than the corresponding period of 1931.

Besides the harbour improvements, which it has been decided to carry out at Taranto and Cagliari, the Government has now decided to undertake some supplementary works at Civitavecchia. The Government has for this purpose made an allowance of 50 million lire, which is to be used particularly for the enlargement of the inner dock, and for the increase of quayage in the port of Civitavecchia as a whole, in order to enable all ships calling there to anchor alongside, and to eliminate the discharge of boats by means of lighters, which is rendering operations very expensive. However, it is pointed out that the Government should not expect the reimbursement of the allowance from the collection of harbour dues and unloading charges, since, in such a case, the effort to reduce the cost of unloading at Civitavecchia would not be successful.

The Consorzio Autonomo del Porto di Genova has published detailed statistics concerning shipping at that port during 1931, which may be summarized as follows:—

FLAGS	No.	1931	
		Arrivals and Clearances N.R.T.	Goods
British ...	798	1,894,833	1,171,361
Spanish ...	291	785,117	584,106
French ...	178	672,228	67,684
German ...	452	1,604,729	178,336
Greek ...	206	478,541	500,799
Dutch ...	440	1,868,720	115,982
American ...	191	878,608	108,691
Norwegian ...	227	299,066	164,805
Danish ...	137	198,678	40,598
Swedish ...	138	231,821	75,732
Belgian ...	25	49,494	24,276
Japanese ...	34	145,328	45,571
Jugoslav ...	39	103,258	105,495
Finnish ...	31	33,941	27,029
Roumanian ...	53	136,566	84,168
Russian ...	46	101,391	27,752
Hungarian ...	5	12,052	18,535
Other Flags ...	54	109,835	58,470
Total Foreign Flags ...	3,345	9,604,196	3,393,390
Italian ...	6,536	10,579,703	3,193,258
General Total ...	9,881	20,183,899	6,587,648

FLAGS	No.	1930	
		Arrivals and Clearances N.R.T.	Goods
British ...	860	2,045,022	1,369,649
Spanish ...	232	582,088	413,107
French ...	255	858,425	97,261
German ...	472	1,552,839	187,241
Greek ...	237	545,845	561,447
Dutch ...	496	1,991,765	193,926
American ...	212	912,630	161,800
Norwegian ...	262	355,182	139,219
Danish ...	106	157,623	46,995
Swedish ...	142	184,114	88,730
Belgian ...	47	88,603	44,822
Japanese ...	24	104,658	7,885
Jugoslav ...	48	111,288	123,818
Finnish ...	34	38,640	23,253
Roumanian ...	30	55,369	53,029
Russian ...	51	100,054	31,071
Hungarian ...	2	5,190	6,858
Other Flags ...	30	39,638	32,420
Total Foreign Flags ...	3,540	9,728,973	3,582,531
Italian ...	7,011	11,310,248	3,558,402
General Total ...	10,551	21,039,221	7,140,933

The British flag has maintained its importance during 1931, in spite of the fact that trade has decreased as a whole. It appears that the Consorzio Autonomo del Porto di Genova is studying the question of the possibility of further reducing unloading charges and expenses in general in the port under its control. The amount of new credits, which have been allowed to carry out the construction of the Mussolini Dock in the port of Genoa, reaches 180 million lire. It is expected that the dock will be ready by the end of 1933.

The S.A. Ente Bacini di Genoa has supplied the following information regarding the tonnage drydocked in that port during the first eight months of 1932:—

	January-August	
	1932 Gross Tons	1931 Gross Tons
Steamers ...	290	334
Motor Sailing Ships ...	11	6
Sailing Vessels ...	18	14
Various ...	39	22
	358	376
	1,699,079	1,923,775

Bremen's Seagoing Shipping Traffic during August

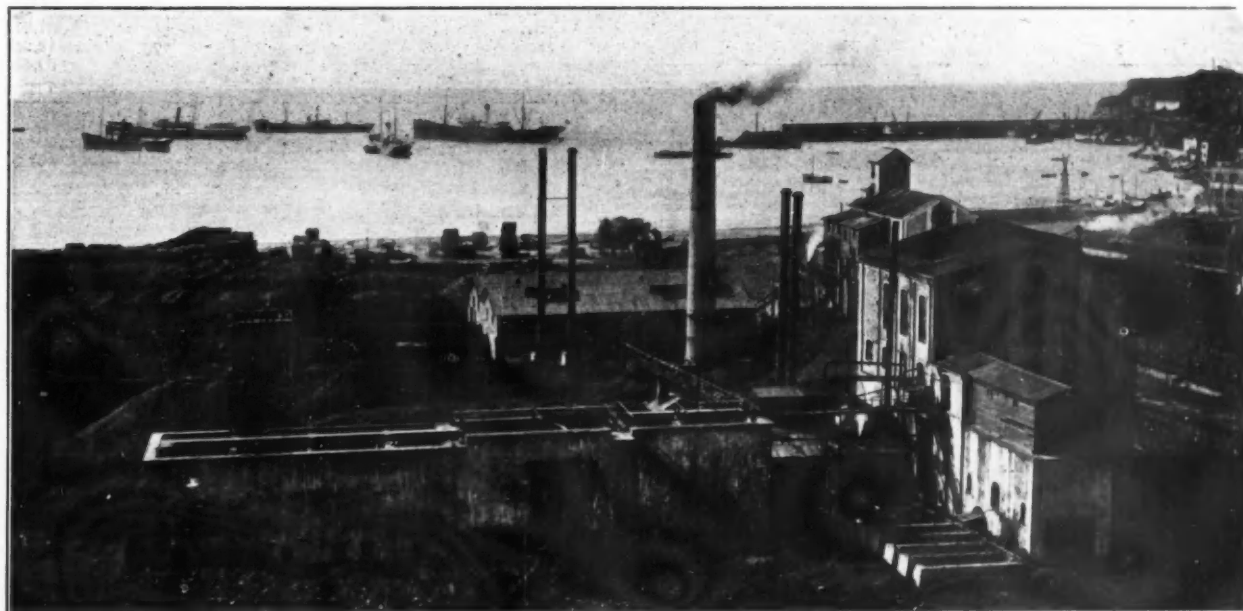
The number of vessels for Bremen account in seagoing shipping traffic during August, with 738, was exceptionally high incoming. Even compared with the most lively traffic months of former years, so far as the number of vessels is concerned, August shows one of the highest figures ever reached, 157 more vessels arrived than in the previous month. The cause of this is the seasonal commencement of coastal traffic which is surprisingly lively this year. However, the increase had not much effect on the tonnage, as the coastal service is mostly done by small motor-sailing ships. Therefore, the figure for August of 676,033 net registered tons only exceeded August, 1931, by 2,000 net registered tons, and the previous month by 750 net registered tons. During the months from January to August, 1932, altogether 5,171,730 net registered tons, or 603,421 net registered tons, equal to 10 per cent., less arrived than in the similar period of the previous year.

Seaborne goods traffic of the five most important Weser ports reached 392,900 tons in August. This was 46,200 tons, or 13 per cent., more than in the previous month, and 26,600

tons, or 7 per cent., more than August, 1931. Imports during the month under report amounted to 216,400 tons. That is 24,300 tons, or 13 per cent., more than in July, and 38,300 tons, or 22 per cent., more than in August, 1931. Compared with the previous month, exports, at 176,500 tons, increased by 21,900 tons, or 14 per cent., but were 11,700 tons, or 6 per cent., less than August, 1931. Compared with July cotton, piece goods, rice and coal arrivals, in particular, were more considerable, as well as potash and coal shipments. Furthermore there were increases in blubber and phosphate.

During the months January to August, 1932, altogether 3,007,400 tons were imported and exported, compared with 3,343,400 tons in the similar period of 1931. Traffic has thus decreased by 336,000 tons, or 10 per cent. This decrease is chiefly in exports; these, chiefly due to smaller potash and piece goods shipments, at 1,101,300 tons, lost 209,400 tons, or 16 per cent. The decrease in imports, with 1,906,100 tons, amounted to 126,600 tons, or 6 per cent., chiefly due to decreases in piece goods and ore.

Near Eastern Port Matters



General View of the Port of Zonguldak.

THE Yugoslav Government has authorized the immediate construction of warehouses at the leading Yugoslav ports, Sussak, Split and Dubrovnik. The work is well forward now, particularly at Sussak, and it is expected that the buildings will be ready in the spring of 1933.

According to the figures which have been supplied by the Statistique Générale de la Grèce, shipping at Greek ports during the first six months of 1932 included the arrival of 573 ships representing 2,496,260 n.r.t. and the clearance of 1,066 ships and 1,921,497 n.r.t. against 1,573 ships and 2,666,777 n.r.t. arrived and 1,086 ships and 2,071,382 n.r.t. cleared during the corresponding period of 1931. In order to obtain an idea of the position of the various foreign flags in Greek shipping it may be interesting to consider the following figures:—

clear that the situation has improved at Pireaus. The position of the various flags at that port reflects more or less the situation appearing from the general statistics of Greek shipping, and may be summarized as follows:—

ARRIVALS				
	1932		1931	
	No.	N.R.T.	No.	N.R.T.
American ...	15	52,344	14	46,865
British ...	110	228,752	127	300,521
Dutch ...	31	57,724	25	51,013
French ...	60	199,925	70	214,829
German ...	44	80,747	54	116,763
Greek ...	388	381,093	491	413,889
Italian ...	471	1,059,736	460	1,039,187
Roumanian ...	67	81,190	45	51,918

CLEARANCES				
	1932		1931	
	No.	N.R.T.	No.	N.R.T.
American ...	3	10,470	1	3,119
British ...	25	38,886	33	64,761
Dutch ...	1	1,561	2	1,356
French ...	53	196,666	51	187,690
German ...	7	9,556	5	6,355
Greek ...	98	100,432	98	109,082
Italian ...	211	475,684	181	449,841
Roumanian ...	54	69,701	38	48,319

CLEARANCES				
	1932		1931	
	No.	N.R.T.	No.	N.R.T.
American ...	12	39,692	14	45,570
British ...	69	98,606	88	144,867
Dutch ...	17	24,372	25	29,590
French ...	54	198,853	61	199,736
German ...	38	83,676	41	83,677
Greek ...	143	139,522	191	196,168
Italian ...	411	910,885	427	981,215
Roumanian ...	59	74,263	42	53,389

Ships arrived and cleared have both shown a big drop, and this is, no doubt, the result of restricted Greek foreign trade in consequence of restrictions on imports, which has been imposed by the Hellenic Government. The position of the foreign flags has remained practically unaltered, as can be seen from the fact that among the ships arrived British vessels occupied the second place as in 1931, preceded by the Italian and followed by the French flags. In spite of the general depression the American, Dutch, Italian and Roumanian flags have shown an increase in the arrivals at Greek ports, while in clearances, only the Roumanian flag has shown any progress.

It may be interesting to study the position of shipping at various leading Greek ports. At Pireaus shipping during the first six months of 1932 included the arrival of 837 ships, representing 1,669,387 n.r.t. (861 ships and 1,655,763 tons in 1931) and the clearance of 563 ships and 1,153,426 n.r.t. (524 ships and 1,121,846 tons in 1931). From these figures it is

The Greek Government has further taken into consideration the projects, which have been submitted to them for the reconstruction of the Customs House Quay at the Port of Pireaus, but no decision has been taken as yet. It is stated that negotiations are being carried on for the concession of a foreign loan, which would facilitate the carrying out of these projects. Considerable interest is being shown in the creation of a Free Zone in the port of Pireaus, and the possibility has been discussed of granting special facilities to foreign merchants desiring to establish a base at Pireaus for their Near Eastern business.

Shipping at Patras, during the first six months of 1932, included the arrival of 99 ships representing 224,269 n.r.t. against 149 ships representing 349,850 n.r.t. during the corresponding period of 1931, and the clearance of 53 ships representing 202,861 n.r.t. against 59 ships and 262,376 n.r.t. Shipping has shown a general drop, and this is due, to a certain extent, to the improvement of the situation at Pireaus, which has attracted much more tonnage than heretofore. The position of the various foreign flags at Patras are as follows:

ARRIVALS				
	1932		1931	
	No.	N.R.T.	No.	N.R.T.
American ...	—	—	—	—
British ...	11	19,025	10	15,748
Dutch ...	4	3,010	7	9,741
German ...	7	8,557	2	2,185
Greek ...	6	3,267	10	24,461
Italian ...	36	171,055	69	251,943

Near Eastern Port Matters—continued

CLEARANCES				
	No.	1932	No.	1931
		N.R.T.		N.R.T.
American ...	3	9,750	1	8,074
British ...	17	22,996	12	15,342
Dutch ...	5	7,296	1	646
German ...	6	7,701	4	4,499
Greek ...	—	—	6	28,343
Italian ...	21	151,023	33	208,853

Patras is the only Greek port where, in spite of the crisis, the position of the British flag is improving. The harbour enlargements at Patras have again been suspended, and it appears that they will not be resumed for some time yet.

Shipping at Salonika included the arrival of 79 ships and 113,803 n.r.t. during the period from January to June, 1932, against 94 ships and 138,881 n.r.t. during the corresponding period of 1931, and the clearance of 70 ships and 119,541 n.r.t. against 98 ships and 168,985 n.r.t. Though matters have not improved at Salonika it must be admitted that they have not been as bad as Patras. No decision has been taken in regard to the projects, which have been submitted recently by the Société G. Hersent, in connection with the enlargement of the port, and it is thought that none will be taken before the general financial situation improves. The position of the various foreign flags in the port of Salonika are summarized as follows:—

ARRIVALS				
	No.	1932	No.	1931
		N.R.T.		N.R.T.
American ...	11	19,559	12	29,161
British ...	3	3,003	5	8,000
Dutch ...	1	185	2	997
French ...	4	7,917	3	5,218
German ...	28	31,473	15	13,672
Greek ...	12	25,767	26	44,816
Roumanian ...	5	3,042	5	3,502

CLEARANCES				
	No.	1932	No.	1931
		N.R.T.		N.R.T.
American ...	3	10,281	6	19,454
British ...	12	17,704	16	27,814
Dutch ...	—	—	1	1,146
French ...	—	—	—	—
German ...	1	1,685	5	7,514
Greek ...	7	14,841	11	13,288
Italian ...	18	28,813	30	59,432
Roumanian ...	1	1,426	—	—

In connection with Greek shipping it may be interesting to note that during the first six months of 1932 the imports of the main commodities such as coal, wheat, etc., into Greece included the following items:—

	1932	1931
	Tons	Tons
Coal ...	381,277	383,143
Wheat ...	331,312	347,198
Maize ...	146,613	10,922

The enormously high cost of ship repairs at Istanbul, and the lack of facilities in other Near Eastern ports has induced several Greek capitalists to take into consideration the question of building new drydocking facilities in Greece, and particularly at Pireaus. Consideration has at first been given to building a shipyard with ship repairing facilities, but in view of the shipbuilding slump it has been decided to drop this project, and a ship repairing yard with a dry dock 200 metres in length is now being considered. It was thought at first that the Government would have given their support to such a scheme, but the Greek Treasury cannot afford this expense at present.

Port of Southampton Topics

Busy Month for Westbound Passenger Traffic.

SEPTEMBER has seen the west-bound passenger traffic on the North Atlantic at its height. September and October are invariably two of the busiest months of the year in this respect and Southampton, as the premier port of the United Kingdom, sees a welcome increase in activity.

The majority of the big ships have been working at top pressure and will continue to do so for the next month. In order to earn as much revenue as possible in the very limited time during which the homeward rush of Canadians and Americans takes place, the vessels have engaged in a number of quick turns on both sides of the Atlantic.

During September there were 33 arrivals or departures by liners of 25,000 tons or over at the port, and on 19 of the 30 days there was at least one of the really large vessels on the move. Saturdays, as usual, were "peak" days, a fact which will be appreciated when it is stated that on September 3rd there were 11 liners being handled, on September 10th 13, on September 17th 9, and on September 24th 12.

The arrivals or departures of the vessels of the principal companies were during the month: To the United States—Cunard Line, 10; Hamburg Amerika Line, 13; Holland Amerika Line, 4; North German Lloyd, 15; Red Star Line, 8; United States Lines, 5; White Star Line, 7. To Canada—Canadian Pacific, 10; Cunard Line, 4.

Several of the liners have had a bigger passenger list in the past month than at any other time this year.

Opening of Trooping Season.

September has also marked the opening of the 1932-33 trooping season, the "Nevasa," the first of the five vessels engaged on this service, leaving for India on September 14th. From now until April there will be a regular stream of troops passing through the port on their way to or from foreign stations. This side of port activities, though little talked about, is a not inconsiderable part of port life during the winter months.

Further Decreases in Statistics for August.

Southampton Docks statistics for August, just published by the Southern Railway Co., do not contradict the fact that things are still very quiet in the shipping world. The figures are under ten headings, and nine sets of them show decreases as compared with the corresponding month of 1931.

The number of vessels slumped from 371 to 310 inward and from 374 to 299 outward, the decreases being 61 inward and 75 outward.

Gross tonnage inward totalled 1,697,364 tons, compared with 1,747,716, and outward 1,562,820, against 1,779,806, giving respective decreases of 50,352 tons and 216,986 tons. Net tonnage

inward totalled 890,506 tons declined by 27,043 tons from 917,549 tons, which was the figure in August last year. Outward the drop was 106,665 tons, the figure for last month being 818,199 tons, as against 924,864 tons a year ago.

The cargo figures are peculiar in that there was a big increase in the imports handled during the month, but an even bigger decline in exports, so that, in the aggregate, there is a slight drop in the volume of cargo handled. The inward freight jumped from 41,393 tons to 49,668 tons, an increase of 8,275 tons, but outward the figure slumped from 28,596 tons to 20,200 tons, a drop of 8,396 tons.

The passenger figures make depressing reading and further reflect the depression on the North Atlantic run and in traffic to the Continent. This year there has been little tourist business to the French ports and, despite record-breaking figures in respect of the Channel Islands, the general figures show a decrease. It might have been thought that the tremendous developments which have taken place in cruising would have pulled the figures round, but the totals are depressing.

But for the many cruises which were started and finished at Southampton during August the situation would have been even worse. The number of passengers inward during August was 55,692, compared with 57,203 in the same month last year, while outward the figure was 47,168, against 58,963. These figures give a decrease of 1,511 inward and 11,795 outward.

Wireless Watch on Oil Supplies

A chain of Marconi stations is to be built through Iraq, Syria, and Palestine to maintain communication along the projected British oil pipelines, which are to connect the wells of the Iraq Petroleum Company at Kirkuk with the Mediterranean ports of Tripoli (Syria) and Haifa (Palestine).

At present these wells are shut in for lack of means of transport. The pipelines, covering in all a distance of more than 1,200 miles, will, when completed, enable the oil to be pumped into tank-ships at these ports.

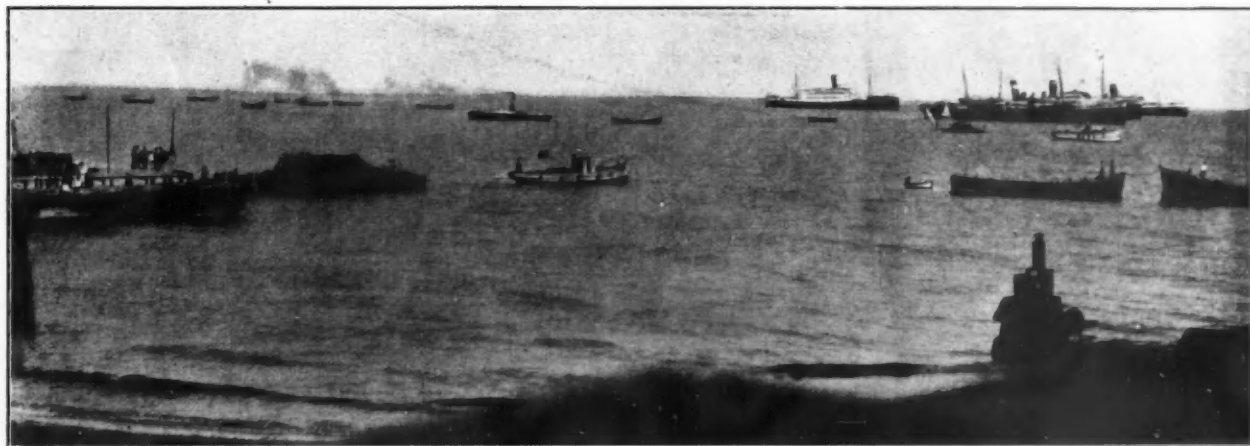
The building of the pipelines is an enterprise of outstanding importance to this country, and careful plans, in which wireless communication is to play an essential part, have been made to ensure that there will be no interruption of the regular flow of oil from the wells to the distant Mediterranean ports in spite of the difficult conditions to be encountered on the route.

A double pipeline will stretch from Kirkuk to Haditha, on the Euphrates, where a bifurcation will be made; one line running to the north through Syria to Tripoli, and the other to the south through Iraq, Palestine and Transjordan to Haifa.

The Port of Mersina

A Progressive Eastern Mediterranean Port

By ANTONIO GIORDANO



General View of the Port of Mersina.

THE Port of Mersina has been of considerable importance since the oldest times, as it has always been the Mediterranean sea outlet of Eastern Asia Minor and Persia. In its hinterland there is large cotton production and important mining resources. It can easily be understood from the above that Mersina has acquired a certain importance as a seaport, especially after the laying down of new railway lines, which has considerably enhanced quick despatch in the port. As a matter of fact, in consequence of the Peace Treaties and other agreements which were signed in 1921 and 1926, the hinterland of the Port of Mersina has been extended to the Persian frontier. The commercial activity of the towns of Marach, Diarbékir, Ourfa, and the provinces of Diarbékir and Birlis, used to be centred in Aleppo, but trade relations with that town have now finished, and are carried on at Adana and Mersina. The hinterland of Mersina represents about one-quarter of the present territory of the Turkish Republic. While the hinterland of Smyrna has a population of 25 inhabitants per square kilometre, the hinterland of Mersina has a population of 11 inhabitants per square kilometre. This situation has been influenced by the development of railway connections, which consist at present of the following lines: Mersina-Yenidjé, 44 km.; Yenidjé-Akchéhir, 532 km.; Yenidjé-Nousseibin, 749 km. (of

which 166 km. are in Syrian territory under French protection); Toprakalé-Payas, 41 km.; Derbesiyé-Mardin, 24 km., and Fevzi Pacha-Malatya, 319 km., that is a total of about 1,700 km. To the above-mentioned lines may be added the Ouloukikhla-Kayseri line, 180 km.; Malatya-Diarbékir, 300 km., and the section of El-Aziz, 25 km., that is a total length of about 500 km. which are under construction. Furthermore, there are the lines from Kayseri to Sivas (140 km.) and from Kayseri to Ankara (320 km.), which will complete the railway programme consisting of 7,000 km. to be ready within three years, and of these about 2,500 km. are to be located in the hinterland of the Port of Mersina.

Mersina is situated at 34 deg. 15 min. longitude East from Greenwich, and 38 deg. 10 min. latitude just at the bottom of the Taurus Mountains. Nature has not favoured Mersina as a seaport, since the coast is sandy and not well established, owing to the mouths of the small rivers originating from the Taurus emptying there. However, the Bay of Mersina is well sheltered from south-west winds, and the bottom of the sea is sufficiently solid. Storms are prevalent during the winter, but are moderate in other seasons. During the winter small and large ships are in danger, owing to the fact that unloading and loading must be operated in the fairway, since adequate harbour facilities are not



The Tache-Iskelesi Pier.

The Port of Mersina—continued

as yet available and they are complicated by the necessity of using small lighters for the carriage of goods from the small piers existing on the coast and the ships anchored from 700 to 1,700 metres from the shore. At present there are five of these piers in the Port of Mersina, and they are:—

(1) Railway Pier, built in 1927, of a length of 152 metres and of an area of 2,280 square metres, wholly built in concrete, fitted with two portal electric cranes of 3 tons and two steam cranes of 3 tons. This pier is connected to the Mersina railway station and used to be employed exclusively for the imports of railway rolling stock, but recently the Turkish State Railway Administration has decided to use the pier also for goods to be exported.

to, the provision for the building of oil loading and unloading facilities is included.

The various piers and quays would be connected by extensive railways to the Mersina railway station.

The line of quays would, according to such project, be built about 150 metres from the present seaboard, and the space thus gained would be filled up with the materials obtained from the large dredging works to be carried on in the bay. In this connection it ought to be noted that, according to the project worked out by the Turkish Government, the depth of water alongside the quays would be increased to 6 metres, while the depth along the piers would be brought during a first period to 8.50 metres, and later on to 10 and 12 metres.



General View of the Port of Mersina.

(2) Tache-Iskélesi Pier, built of lumber on iron pillars, measuring 52 metres and having an area of 312 square metres—no crane or railway connection.

(3) Customs House Pier, built during the French occupation in 1914-1918, of lumber and iron. This pier has a length of 110 metres and an area of 1,342 square metres. One steam crane of 10 tons and two electric cranes of 2 tons are provided. The pier is connected to the Customs House warehouses—having an area of about 10,000 square metres—by a railway line.

(4) Interior Trade Pier, built in 1925 and extended in 1930. This pier, built of lumber and iron, has a length of 128 metres and an area of 768 square metres. It is connected to the other sections of the port by a railway and is served by a 2-ton electric crane.

(5) Gazhané Pier, where the oil trade is handled.

The Port of Mersina is under the administration of the Société Anonyme Turque du Monopole des Affaires du Port de Mersine, which is organised on the lines of the Istanbul Liman Sirketi, and has handled, since the month of August, 1927, all the unloading and loading operations, and for such purpose owns the following vessels: 4 steam tugs of 218 h.p., 2 motor tugs of 68 h.p., 53 lighters and about 16 boats of various types and sizes.

A project has been contemplated for the construction of a port which would thus render possible the exploitation of the geographical position of Mersina.

Taking into consideration the fact that the main items of trade include cotton, coal and minerals, the project provides for the construction of (a) a pier having an area of 10,000 square metres with a corresponding storage space at the back for the coal and mineral trade, and to measure 250 metres in length and 75 metres in breadth; (b) a pier with concrete warehouses of an area of about 8,000 square metres, which would give space for the storage of about 50,000 bales of cotton, and to measure 250 metres in length and 75 metres in breadth; (c) silos for grain and oilseeds, etc., having a capacity from 15,000 to 20,000 tons; (d) an additional pier to handle the general merchandise trade.

The project, furthermore, provides for the construction of 10 portal electric cranes of 1.5 tons, one of 15 tons and one floating crane of 50 tons, etc.

The Turkish Government has taken into consideration also the possibility of attracting the oil pipe line from the Mossul Wells to Mersina, and therefore, in the project of a port above referred

The necessity of carrying out these works appears very urgent, taking into consideration the development of shipping, as is shown in the following figures:—

Tonnage arrived at Mersina.

		Steamers		Sailing Vessels	
		No.	N.R.T.	No.	N.R.T.
1925	...	389	615,957	370	5,554
1926	...	409	650,585	612	10,103
1927	...	366	510,210	727	14,754
1928	...	397	631,973	514	7,190
1929	...	338	697,612	563	6,270
1930	...	435	708,592	430	6,064

The decision of the Turkish Government to reserve the right of coastwise services to the Turkish flag has not influenced the position of foreign flags in the Port of Mersina considerably, as is seen by examination of the following statistics:—

		Turkish Flag		Foreign Flags	
		No.	N.R.T.	No.	N.R.T.
1925	...	98	75,868	291	570,089
1926	...	83	69,063	326	581,523
1927	...	112	74,910	254	435,900
1928	...	114	94,516	283	537,457
1929	...	107	106,383	231	590,629
1930	...	128	101,674	307	606,918

From 1926 to 1927, while the number of foreign ships calling at Mersina showed a decrease of 72 ships, the Turkish flag had an increase of 29 ships only, which means that no advantage has been brought to Mersina by the above-mentioned decision of the Turkish Government. It may be interesting, therefore, to consider the situation of the various foreign flags in the Port of Mersina as outlined by the following figures:—

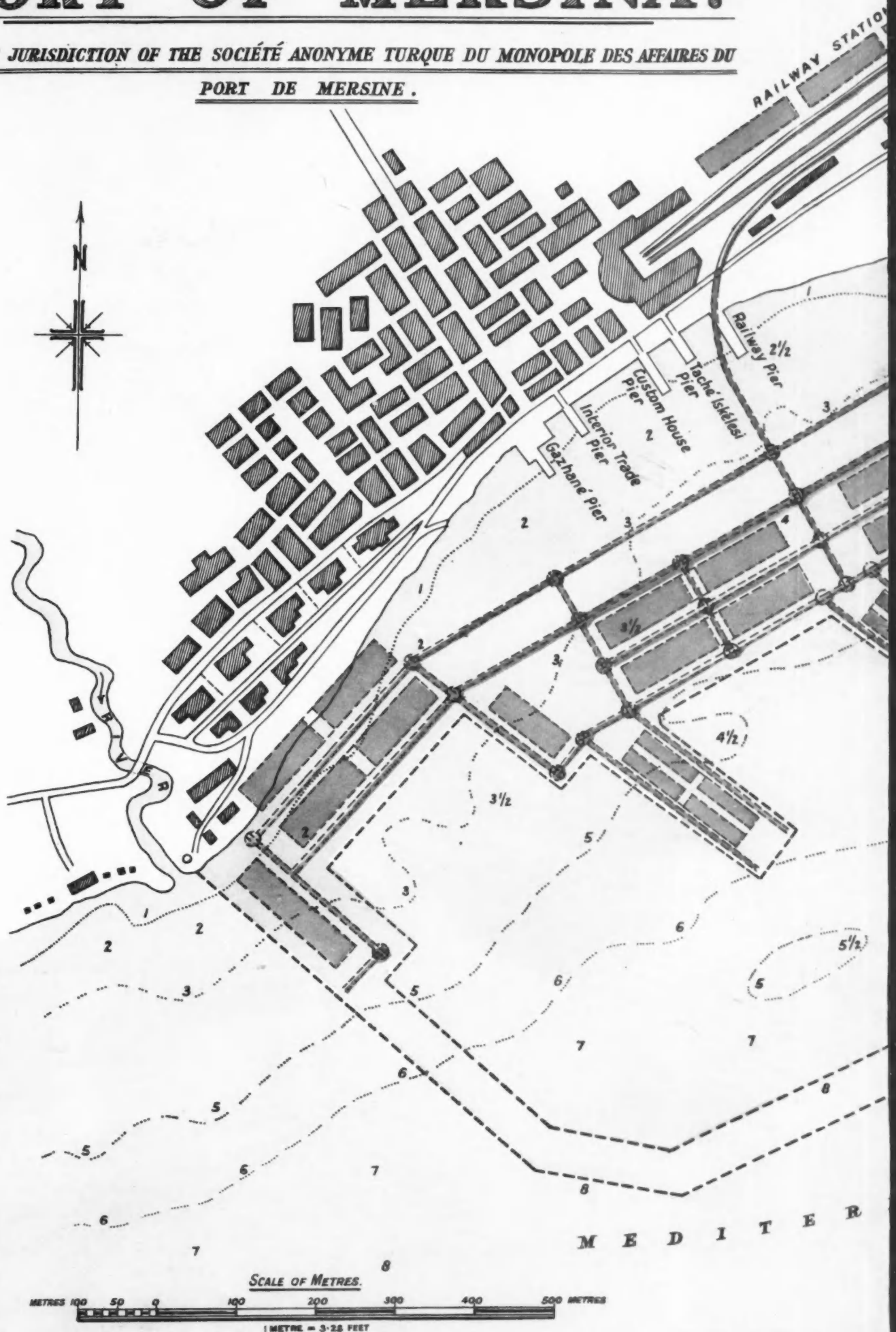
Steamers arrived at Mersina.

Flags		1928		1929		1930	
		No.	N.R.T.	No.	N.R.T.	No.	N.R.T.
Turkish	...	106	106,385	114	94,516	128	101,674
French	...	110	125,884	127	89,811	51	135,992
British	...	98	151,999	106	176,857	92	152,466
Italian	...	106	280,390	96	204,688	89	206,655
German	...	20	31,821	17	27,030	22	33,497

The position of the British and Italian flags in the Port of Mersina has remained practically unaltered, while there has been a slight increase in the French and German share.

PORT OF MERSINA.

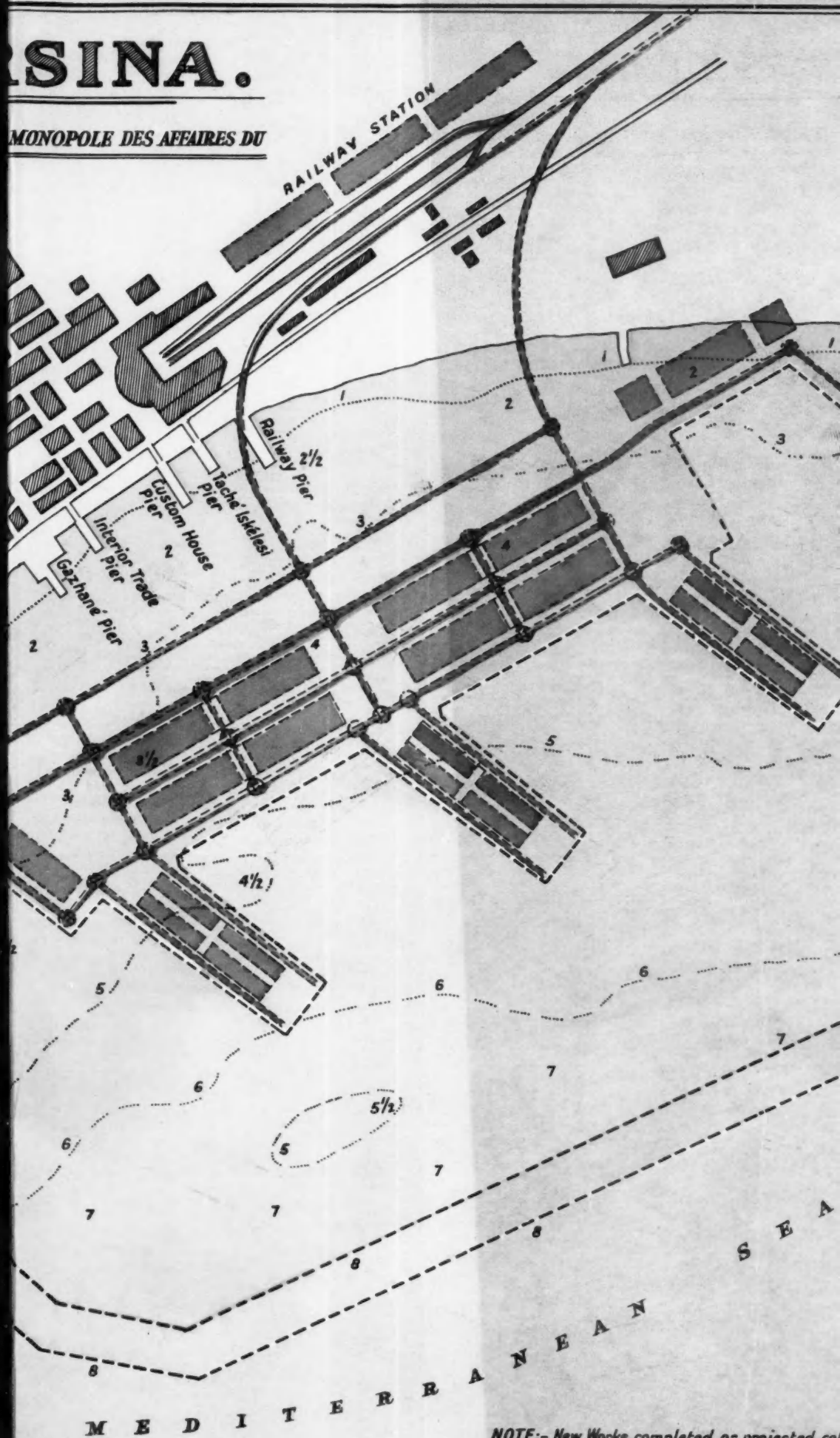
UNDER THE JURISDICTION OF THE SOCIÉTÉ ANONYME TURQUE DU MONOPOLE DES AFFAIRES DU
PORT DE MERSINE.



TO THE DOCK AND HARBOUR AUTHORITY, OCT

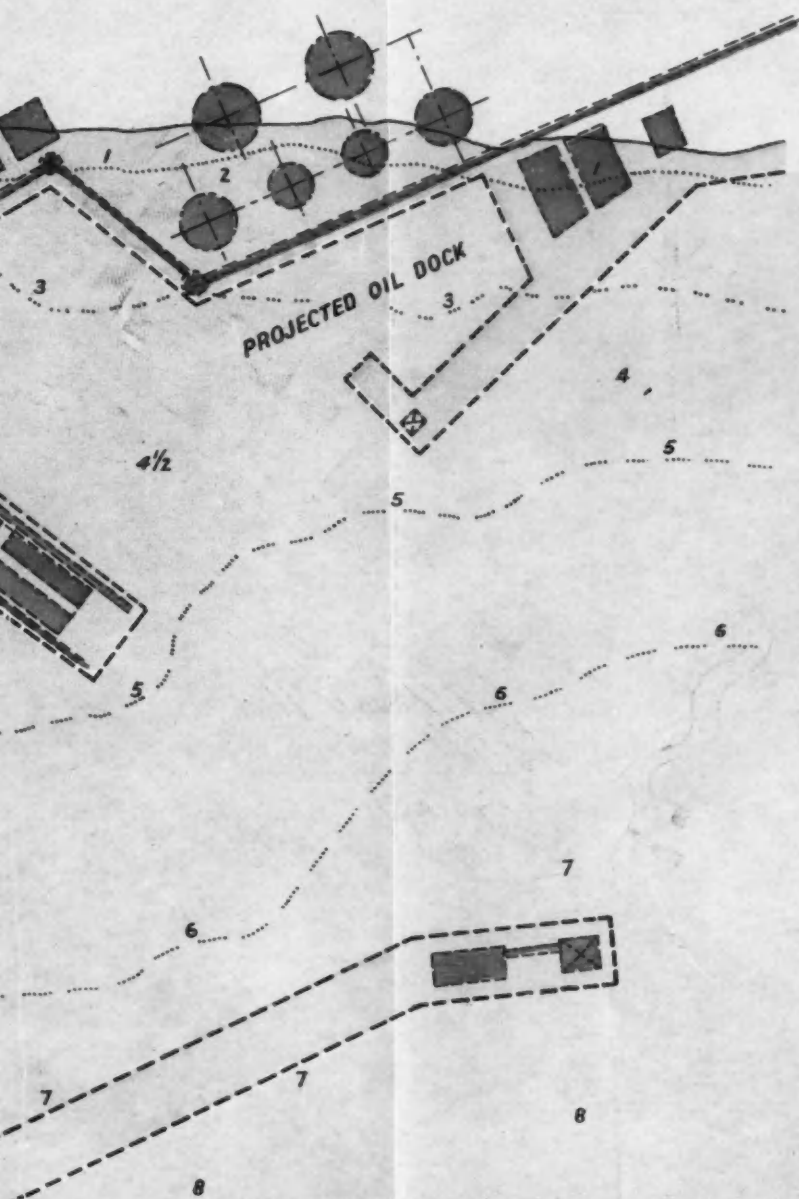
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NOTE:- New Works completed or projected co

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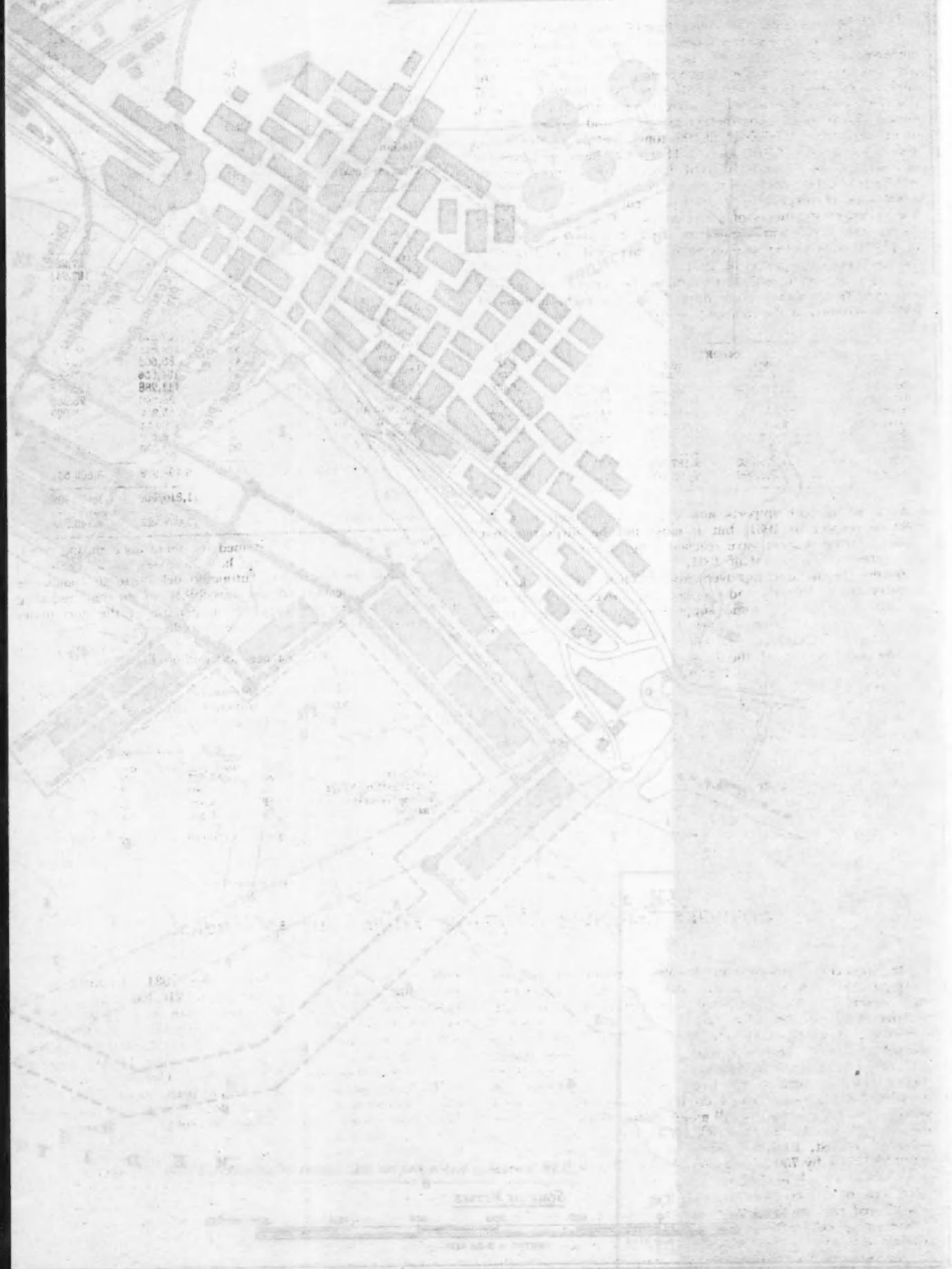
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PORT OF MERSINA.

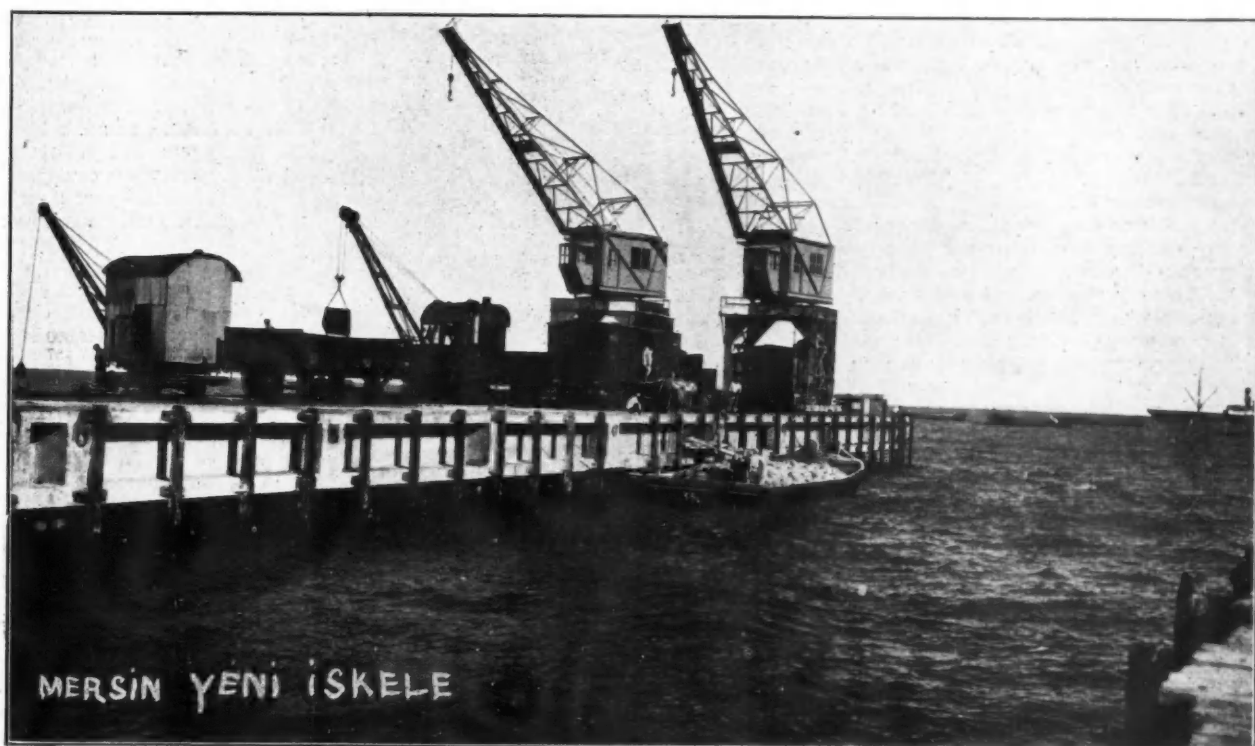
REPORT OF THE COMMISSION OF THE SOCIÉTÉ ANONYME TURQUE DE MONOPOLÉ DES MINÉRAUX
PORT DE MERSINE.



The Port of Mersina



The Customs House Pier.



The Railway Pier built in 1927.

The Port of Mersina—continued

Turning to the question of the quantities of goods unloaded and loaded, it is possible to gather the following information from the statistics which have been published by the Chamber of Commerce and Industry at Mersina :—

		Trade with Foreign Ports		Trade with the Turkish Ports	
		Imports Tons	Exports Tons	Imports Tons	Exports Tons
1926	...	27,967	46,634	17,742	20,809
1927	...	36,906	39,635	10,951	14,285
1928	...	72,989	32,850	34,437	16,518
1929	...	79,991	34,677	51,521	24,147
1930	...	65,201	60,751	56,973	14,417

With the exception of exports to Turkish ports shipping at Mersina has shown an increase between 1926 and 1930, and is now nearly 200,000 tons yearly.

While the imports consist of different goods such as iron (15.9 per cent.), machinery (14.3 per cent.), colonial goods (11.8 per cent.), textiles (11.2 per cent.), automobiles (9.6 per cent.), etc., the bulk of the exports consist of cotton (80.94 per cent.), followed by mohair (4.43 per cent.), etc.

In regard to the share of the various countries in the trade handled through the Port of Mersina it may be interesting to consider the following figures :—

*IMPORTS			*EXPORTS		
		Per Cent.			Per Cent.
Japan	...	15.00	Italy	...	23.53
Germany	...	13.92	Russia	...	21.75
France	...	12.83	France	...	15.52
India	...	8.80	Greece	...	12.75
Belgium	...	8.76	United Kingdom	...	12.63
Czechoslovakia	...	8.16	Germany	...	3.69
Russia	...	6.77	Spain	...	3.07
Italy	...	5.78	Syria	...	2.67
United States	...	4.24	Egypt	...	1.65
United Kingdom	...	1.85	Belgium	...	1.10

* Percentage on the average value of Imports and Exports.

Taking into consideration the important programme of railway developments which is being carried on by the Turkish Government, the help which is being granted to Turkish agriculture, with particular reference to cotton, and the opportunities offered by the mining resources of Asia Minor, there is no doubt that the above-mentioned figures may show considerable development, and that Mersina may be classed among the most important ports of the Eastern Mediterranean, especially in view of the fact that Mersina is connected on the coast side to the majority of the overseas ports.

As a matter of fact the Turkish Seyri-Sefain and some other Turkish shipowners maintain regular mail services between Istanbul-Smyrna and Mersina, also calling at other smaller ports. Through the organisation of the Lloyd Triestino and the Società di Navigazione Italia (Flotte Riunite Cosulich, Lloyd Sabauda and Navigazione Generale Italiana), Mersina is connected to Trieste, Naples and Genoa, and through such ports to North and South America, North Africa, etc. Of importance in this connection are the two monthly services maintained by the Messageries Maritimes, while the services of the Khedivial Steamship Co. place the British flag in third place immediately after the Italian steamship organisation. In addition to the Khedivial, the Prince Line maintains regular services from Mersina to Malta, Liverpool and London, while the German flag (Deutsche Levant Linie und Orient Dienst) and the Swedish flag (Swedish Orient Line) are the direct competitors of the British steamship lines, since they operate additional steamship services to Antwerp, Rotterdam, London and Hamburg.

However, the possibility of taking advantage of the opportunities offered depend upon the carrying out of the project relating to the construction of the new Port of Mersina, though it is very difficult to forecast when this project will be settled, as the Turkish Government cannot at present rely on large financial resources, and under the present situation of the international money market it is practically impossible to obtain a loan abroad.

Hull and the Humber

Reconstruction Work at St. Andrew's Dock, Hull.

THE scheme of reconstruction at St. Andrew's Dock, Hull, of which the owners are the London and North-Eastern Railway, is proceeding apace, and is involving the capital outlay of many thousands of pounds. After the No. 2 Quay and its newly completed fish market, which were burned down three years ago, had been reconstructed with fire-proof material, the railway authorities directed their attention to No. 1 Quay, and important improvements in the fish landing and despatch stage are now being carried out. Fully half of the quay, which is 1,590-ft. in length, has been reconstructed, and the remainder of the work is rapidly proceeding. The No. 2 Quay is 1,498-ft. long. Buildings all along these long quays are being modernised, and offices, etc., now inadequate for the ever-growing demands of the Hull fishing industry, are being demolished. Between 30 and 40 merchants' offices, including a building used as a club-house, have already disappeared. The clearing of the land on which they stood has enabled not only the main arterial road of the St. Andrew's Dock to be widened, but also an extension of covered-in accommodation on the landing stage. Old-fashioned wooden sheds on the quayside which served many merchants as offices will soon have gone for ever, and in their stead there will be approximately 160 concrete boxes, below which caves for the storage of fish will be provided. Gas is being replaced by electric light as a means of illumination, and extensions of the water supply have been made.

In order to protect their interests as owners of the dock, the London and North-Eastern Railway directors have given notice to merchants and trawler owners alike terminating existing tenancy agreements and intimating new conditions to operate from November 1st. Recently there has been litigation over the claim of the fish merchants to exercise their discretion in the sending of fish inland by road or rail, but this claim has been unsuccessfully contested by the railway company, whose traffic has been considerably affected by the growth of motor transport, which has had free access to the Billingsgate, the private property of the railway. Although the new agreements are considered by some of the tenants as too wide in their scope, there is every likelihood of an amicable settlement being arranged between the Hull Fish Merchants' Protection Association and the dock and railway authorities.

Reduced Activity at the Hull Docks.

Whether import duties are responsible or not, the fact remains that there is considerably reduced activity at the Hull Docks both in the import and export trades, this becoming more and more marked each month. The arrivals of fruit, for which Hull is a very important centre, have fallen considerably, and the same applies to timber, wheat and kindred cereals, and oil

seeds, in all of which the Third Port specialises. In the first eight months of the present year imports of soft wood (sawn and hewn) were 430,650 loads, or 127,300 loads less than in the corresponding period of 1931. Both Soviet Russia and Scandinavia are sending smaller quantities in view of the industrial depression in Great Britain, and the reduced consumption of wood arising therefrom. In the matter of wheat and like cereals, the eight months' total is 780,800 tons, or 110,300 tons less, and in that of oil seeds the total is just over 380,000 tons, or 52,000 tons less. These reductions, taken in conjunction with smaller imports of manufactures, etc., from the Continent, mean, of course, less work at the docks and a source of anxiety to their railway owners, who already are severely hit by road transport competition. At the same time, there is a further shrinkage of the export and re-export trades, a considerable item being the reduced shipments of coal. At Hull in the eight months the total exports of coal were 605,000 tons and, taking all the Humber ports together, the aggregate was 2,412,900 tons, a decrease of no less than 586,850 tons when compared with the corresponding period of 1931, which was by no means a good year, and showed a very big reduction on 1930. A fact which has not escaped notice is the increased use that is being made of the fine King George Dock at Immingham, on the opposite or south bank of the Humber, for the shipment of coal, apparently to the disadvantage of Hull. In the past eight months, January-August, while Hull has exported 605,000 tons of coal, Immingham has exported just over a million tons, or 66 per cent. more than Hull, the premier port. A possible explanation is that from many collieries in the Midland area the rail distance is less and the charges per ton below those on coal sent to Hull.

Progress in Filling-in the Old Queen's Dock, Hull.

A further step in the work of filling in the old Queen's Dock at Hull, in order to provide a central square or boulevard, has been made and, thanks to the efforts of the Hull Fire Brigade, the last remaining water has been pumped out. The connection with the Princes Dock at one end and the old harbour at the other has been cut off by the construction of retaining walls, while the bridges which formed the means of land communication between the old town and the newer parts of the city have been removed and new roads made. Thus the Old Town, which up till recently was entirely surrounded by water—viz., docks and the River Humber—has now completely lost this insular characteristic. Hundreds of thousands of tons of material are still required to bring the dock space of ten acres up to the level of the quays. Streets have been laid out on the north and south sides of the open space and two others across it to facilitate land traffic.

Irish Harbour Matters

Limerick

Limerick Harbour Charges.

AT a meeting of Limerick Harbour Board, the secretary (Mr. McNeice) read a letter from the Ministry of Industry and Commerce, Dublin, asking for information as to the differences in charges enforced on shipping to Irish ports. He stated that his attention had been called to the fact that the charges on shipping from Great Britain were lower than those charged to vessels from foreign ports. The Minister suggested that in future this practice should be discontinued, and asked for particulars as to port charges.

The secretary said he understood that the letter referred to coal imports in view of the economic differences existing between the Saorstat and Great Britain.

In reply to Alderman Donnellan, Mayor of Limerick, the secretary said that the Harbour Board had preferential rates. Coal vessels from Great Britain were charged only 4d. per ton of registered tonnage, although the Commissioners could charge 6d. per ton. Foreign vessels were charged 10d. per ton.

Mr. McCormack: We are penalised across the channel, and I do not see why, as far as possible, we should not make the other fellow pay on his side. I suggest that the rate for foreign vessels should be the same as for British vessels, and that the charge should be just for both at 6d. per ton. I formally move to this effect.

Alderman Wallace seconded and the resolution was agreed to unanimously.

Limerick Dock Improvement.

In reference to the proposed extension of Limerick docks, a letter was received by the Secretary to the Harbour Commissioners from the Department of Industry and Commerce stating that as the Minister was advised that, as the Commissioners were authorised in October, 1926, to carry out a scheme of dock extension, and to apply for that purpose the whole or any part of their reserve fund, his formal assent to proceeding with the partial scheme of port development was unnecessary. The letter added that the Minister was glad to learn that the Commissioners were now able to finance the partial scheme, estimated to cost £100,000 out of their own resources.

The matter was then dealt with in committee at which it was pointed out that in view of the industrial policy of the Government, which tended to hinder the development of local imports of grain by the proposed dock scheme, it was believed that the Harbour Board's income would not remain at its present figure.

Mr. McCormack favoured proceeding with the scheme of partial development and proposed that a partial scheme be prepared by the engineer and that they advertise for tenders.

In view of what the Minister wrote previously, Alderman O'Flynn said he thought it was a unanimous decision that as soon as the engineer's plans and specifications were ready they should advertise for tenders.

Replying to Mr. Loughrey, the engineer said that surplus revenues could be transferred to the reserve fund with the consent of the Minister, and then could be spent as required for the scheme.

Alderman O'Flynn said that too much had already been lost over the delay. He proposed that the Board should advertise as early as possible.

Mr. McCormack seconded the proposal which was adopted.

The engineer said that he would be ready with the plans and specifications without delay.

Dublin

Dublin Port and Docks Board. Why Men were Dismissed.

A suggestion that political motives were at the bottom of the dismissal of 51 men from the dredging plant of the Dublin Port and Docks Board was repudiated at the meeting of the Board, held under the presidency of the vice-chairman, Mr. Walter Baird.

The reasons for the dismissals were set out in a report by the engineer, and were totally unconnected with the present economic situation in the Free State.

Major Hollway stated that had the Board been influenced by the present needs of the port it would not be a question of suspending 51 men, but of closing down altogether.

The chairman, in opening the meeting, read a report from the engineer, Mr. J. Mallagh, in which it was stated that a great effort was made in the latter part of 1931 and in the beginning of 1932, to have the river and basins dredged to their fullest extent prior to the Eucharistic Congress last June. This entailed the employment of additional men from the end of

February. Prior to the cessation of the dredging in June, it was known that the dredging plant had suffered severely with the exceptionally heavy strain, and since then, the normal dredging staff were engaged on the overhaul of the river plant. The repairs of the "Deepworker" were so extensive that they would not be completed until about the second week in October, and there being no further overhaul on the attendant hoppers and other plant, the shorter service men in the crews had been suspended until dredging was resumed.

The amount dredged for the period, being about one million tons, was about the average for the normal year's work. Expenditure in connection with the overhauls had brought the dredging cost to £27,000 in round figures. He proposed to keep the "Sandpiper" dredging on the bar until the end of the year. This would involve an additional expenditure of £3,000, which together with the amount due for tonnage of the plant would bring the total cost up to £31,000, which was the amount allocated to dredging.

The chairman said that that was the explanation of the whole thing. So far as the Board was concerned they did not want to see any more out of employment.

Mr. James Larkin, senior, suggested that a small committee should be appointed to see if work could not be provided for the men who had been suspended.

The Lord Mayor also agreed.

Major Hollway also agreed that a committee should be formed, and said that at no time had the Board thought it advisable to take the step that was taken because of shipping depression at the port. If they were influenced by the present needs of the port, not only would 51 men be suspended, but there would have been a general closing down.

Mr. David Barry said that they could not shut their eyes to the fact that the finances of the port had gone down considerably, and if the present economic situation continued, a very large number of men would become unemployed.

The chairman said that it would be time enough to consider the setting up of a committee when they had a further report from the chief engineer.

Tonnage Rates in Dublin.

The following letter was received by the Dublin Port and Docks Board from the Department of Industry and Commerce:

"I am directed by the Minister for Industry and Commerce to inform you that his attention has been called to the fact that, at some ports, tonnage rates on vessels from ports in Great Britain are lower than on vessels from other countries.

"The Minister desires me to say that it is the wish of the Government that under the present circumstances any differentiation of the character which may at present exist should be discontinued.

"Perhaps you will be good enough, therefore, to let me know whether any difference of the kind exists at your port, and, if so, I am to invite your observations on the matter.—

T. J. FLYNN."

The vice-chairman (Mr. Walter Baird) said the best way to deal with this would be to form a small committee, and he suggested the following as members:—The Vice-Chairman, Senator Moran, Mr. W. Hewatt, Mr. T. R. McCullagh, Capt. Gordon, and Councillor J. Ryan, and that they should meet after that meeting to draft a reply to the Minister.

The chairman's suggestion was agreed to.

Cork

Differential Tonnage Dues in Cork. Cork's Reply.

Having considered the circular letter of the Department of Industry and Commerce regarding tonnage dues on British and other vessels, the following reply, approved by the Cork Harbour Commissioners and signed by the General Manager and Secretary, Mr. Eugene Gayer, has been addressed to the Director of Transport, Department of Industry and Commerce:

"I duly received your letter of the 7th instant drawing attention to the fact that at some Saorstat ports the tonnage dues on vessels from ports in Great Britain are lower than on vessels from other countries, and intimating that it is the wish of the Government that, under present circumstances, any differentiation of the character which may at present exist should be discontinued.

"I have placed this letter before my Commissioners, who desire me to say in reply that any differentiation which exists at Cork arises from the terms of the first schedule to the Cork Harbour Act of 1883, in which the tonnage dues chargeable on various classes of vessels are set out.

"It will be noted that by paragraph (a), which deals with coasting vessels (which are defined), a rate of 4d. per register ton is fixed, and by paragraph (b) the tonnage dues on other vessels is fixed at 1s.

Irish Harbour Matters—continued

“ By paragraph (d) a rate of 3d. per register ton is fixed for colliers (which are also defined).

“ These rates on ‘coasting vessels’ and ‘colliers’ were increased to 4½d. per register ton for both classes by Section 4 of the Cork Harbour Act of 1903.

“ In the second schedule to the Act of 1883 the rates for use of deep-water quays are fixed at 3d. and 4d. in the case of ‘coasting vessels’ and ‘other vessels’ respectively.

“ All these rates are statutory, and are being levied at their maximum. The Commissioners have no power to increase maximum rates. If they are required to level their rates between the two classes of ships, they would have to reduce the rate on ‘other vessels’ to the ‘coaster’ rate. This would entail such a big drop in revenue to the Commissioners that, under existing conditions, they cannot afford to adopt that course.

“ Differentiation as to rates on goods also necessarily arises by reason of the continuance in operation of Section 54 of the Cork Harbour Act of 1820, which limits the dues to be charged on goods to 12½ per cent. of the freight. The freights from Great Britain being lower than the freights from overseas, the 12½ per cent. clause automatically creates a discrimination in favour of goods shipped from British ports.

“ It would be impracticable—again for revenue reasons—to reduce the rates on goods from overseas ports to the level of charges on goods from British ports, and the British charges cannot be increased by reason of the above restriction.

“ As it is the wish of the Government that the differentiation which at present exists should be discontinued, I am to respectfully submit that the situation as regards Cork can be met at an early date if the Government will be good enough to facilitate the passage of the Cork Harbour Bill through the Oireachtas. If and when the bill is passed a fixed schedule of goods will operate, this schedule will have the effect of doing away with the differentiation imposed by the 12½ per

cent. of freight restriction, and as regards tonnage dues the Minister will have power to adjust the incidence of these by order.

“ I am, however, to point out that as the differentiation in tonnage dues in shipping from British and Oversea ports is not peculiar to Cork, but exists (as far as my Commissioners are aware) at every port in the Saorstát, and as ports generally are in competition with one another, it would prejudicially affect the interests of any one port if the dues were equalised by the process of raising British tonnage dues to the level of Oversea tonnage dues unless similar action were taken at all ports.

“ The whole question of dues at Saorstát ports is dealt with exhaustively in the report of the Ports and Harbours Tribunal, and their recommendations under this heading are summarised on pages 419, 423 and 424 (recommendations Nos. 3 and 14 to 21), and I am to further respectfully submit that, perhaps, the Government could not do better than to favourably consider the question of implementing by legislation the findings of the Tribunal thereon.”

Belfast

Belfast Harbour Affairs.

At a meeting of the Belfast Harbour Board on the 6th September, Sir George Clarke, Bart., D.L., presided, in the absence of the chairman.

The report of the Harbourmaster showed that 441 vessels had arrived in the port during the period from 14th August to 3rd September, as follows: coastwise and cross-Channel, 407 foreign, 24 non-trading 10.

The total tonnage of vessels which arrived from 1st January to 3rd September was, Coastwise and cross-Channel, 1,925,265, a decrease from the corresponding period of 1931 of 3,329.

Foreign 541,177, an increase of 37,691.

Non-trading 45,300, a decrease of 20,484.

Total—2,511,742, an increase of 13,878.

Aden Port Trust.

The following are the returns for the month of July, 1932, of shipping using the port:—

	No.	Tonnage
Merchant Vessels over 200 tons ...	113	474,642
“ “ under 200 tons ...	4	648
Government Vessels ...	1	1,344
Dhows ...	37	1,094
PERIM.		
Merchant Vessels over 200 tons ...	21	67,732

The total value of imports excluding Government stores was Rs.43,99,000, as compared with Rs.39,45,000 for July, 1931, and of exports Rs.26,62,000, as compared with Rs.26,16,000.

The total value of both imports and exports together was Rs.70,61,000, as compared with Rs.65,61,000.

Imports during the month were above those for July, 1931, in the case of hardware, seeds, piece goods (grey, white and printed or dyed), twist and yarn, tobacco (unmanufactured and

TRADE OF THE PORT.

Article.	Unit	Imports.		Exports.	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal ...	Tons	1,001	25,029	0	0
Coffee ...	Cwts.	6,176	2,09,578	8,121	3,46,772
Grain, Pulse and Flour ...	“	27,881	1,54,040	11,908	61,731
Gums and Resins ...	“	149	4,589	1,640	26,424
Hardware ...	“	0	29,173	0	27,324
Hides, raw ...	No.	1,516	1,257	984	1,019
Oil, Fuel ...	Tons	40,009	10,00,225	0	0
“ Kerosene ...	Gls.	20,496	12,865	5,212	3,930
“ Petrol ...	“	14,372	18,402	12,004	15,346
Salt ...	Tons	0	0	14,900	1,68,000
Seeds ...	Cwts.	4,855	44,819	1,503	16,816
Skins, raw ...	No.	78,108	23,203	131,157	84,813
Sugar ...	Cwts.	8,899	53,828	7,229	47,806
Textiles—					
Piece Goods, Grey ...	Yds.	4,097,900	5,75,702	2,909,340	3,97,132
“ “ White ...	“	938,835	1,73,228	197,535	41,224
“ “ Printed or Dyed ...	“	972,046	2,15,364	994,816	2,33,467
Twist and Yarn ...	Lbs.	368,684	1,63,818	213,183	1,02,035
Tobacco, Unmanufactured ...	“	1,330,896	2,07,392	699,608	1,03,901
“ Manufactured ...	“	59,444	43,283	22,960	21,791
Other Articles ...	No. of Pkges.	53,474	8,05,579	11,857	2,86,284
Treasure, Private ...	—	0	6,32,524	0	6,18,352
Railway Materials ...	Tons	0	0	1,940	58,200
Total ...	—	—	43,98,904	—	26,62,367

The number of merchant vessels over 200 tons that used the port in July, 1932, was 113, as compared with 119 in the corresponding month last year, and the total tonnage was 475,000, as compared with 468,000.

Excluding coal, salt, fuel oil and military and naval stores and transhipment cargo, the total tonnage of imports in the month was 6,400, and of exports 3,400, as compared with 6,600 and 4,200 respectively for the corresponding month last year.

manufactured), and treasure (private); and below in the case of coffee, grain, pulse and flour, gums and resins, hides (raw), skins (raw) and sugar.

Export were above those for July, 1931, in the case of coffee, gums and resins, hardware, seeds, piece goods (white, and printed or dyed), twist and yarn, and treasure (private); and below in the case of grain, pulse and flour, hides (raw), skins (raw), sugar, piece goods (grey), tobacco (unmanufactured and manufactured).

The Port of New York

Latest Data issued by the Bureau of Commerce

Foreign Trade at the Port of New York.

EXPORTS and imports at the Port of New York in June, 1932, had a total value of \$89,300,000, a decline of 44 per cent. from the corresponding period last year. Exports were valued at \$36,818,000, which was a decline of 50 per cent., and imports were \$52,482,000, a decline of 40 per cent.

	June 1932	June 1931	Net Change	
	\$	\$	Amount	Per Cent.
Exports ...	36,818,000	74,234,000	-37,416,000	-50.4
Imports ...	52,482,000	86,844,000	-34,362,000	-39.6
Exports and Imports	89,300,000	161,078,000	-71,778,000	-44.5

While the value of foreign trade at the Port of New York continues to show declines in comparison with similar periods a year ago, the relative position of the port with respect to all other ports in the country remains very much the same. The value of foreign trade at New York in June, 1931, was equal to 44 per cent. of that of the whole United States, and in June of this year it was 40 per cent.

The value of exports and imports at the Port of New York for the fiscal years ending June 30th, 1931 and 1932, was as follows:—

	Fiscal Year, June 30th 1932	Fiscal Year, June 30th 1931	Net Change	
	\$	\$	Amount	Per Cent.
Exports ...	624,335,000	1,072,288,000	-447,953,000	-41.8
Imports ...	895,244,000	1,161,680,000	-266,436,000	-22.9
Exports and Imports	1,519,579,000	2,233,968,000	-714,389,000	-31.9

A comparison of the export and import tonnage for the fiscal years 1932 and 1931 shows a much lesser percentage decline, demonstrating that much of the falling off in the value of foreign trade is due to the lowering commodity prices. Exports and imports at the Port of New York amounted to 17,565,000 tons, a drop of 3,000,000 tons from last year, which is equivalent to 14 per cent. Exports dropped 29 per cent., but the volume of imports stood up remarkably well, falling off only 7 per cent. The volume of imports has been maintained largely through increased receipts of commodities destined for refining or consumption in the port area. Petroleum, which in 1927 constituted 30 per cent. of the total imports, made up 49 per cent. in 1931 and 45 per cent. in 1932.

	Fiscal Year 1932	Fiscal Year 1931	Net Change	
	Tons	Tons	Amount	Per Cent.
Exports ...	4,875,000	6,838,000	-1,963,000	-28.7
Imports ...	12,690,000	13,651,000	-971,000	-7.1
Exports and Imports	17,565,000	20,499,000	-2,934,000	-14.3

The volume of import tonnage, amounting to 12,690,000 tons, represents 37 per cent. of that of all United States ports during the period, which is the highest ratio that New York has attained in the last decade at least.

The following tabulation of the volume of foreign trade at the Port of New York for the past ten fiscal years shows the fairly level trend of imports has been maintained, but that exports have dropped considerably.

Volume of Foreign Trade (Tons)

Fiscal Years	Exports	Imports	Exports and Imports
1932 ...	4,875,000	12,690,000	17,565,000
1931 ...	6,838,000	13,661,000	20,499,000
1930 ...	8,454,000	15,892,000	24,346,000
1929 ...	11,134,000	16,755,000	27,889,000
1928 ...	10,698,000	14,205,000	24,903,000
1927 ...	11,512,000	12,775,000	24,287,000
1926 ...	10,916,000	12,353,000	23,269,000
1925 ...	11,975,000	11,669,000	23,644,000
1924 ...	11,527,000	10,967,000	22,494,000
1923 ...	10,958,000	13,235,000	24,193,000

Vessel Movements in Foreign Trade.

Entrances and clearances of vessels in foreign trade at the Port of New York during the month of July, 1932, fell off sharply as compared with that month last year, the decline amounting to 26 and 25 per cent. respectively.

	July 1932	July 1931	Net Change	
			Amount	Per Cent.
Entrances, No. of Vessels ...	398	538	-140	-26.0
Clearances, No. of Vessels ...	422	563	-141	-25.0
Entrances, Vessel Tonnage	2,168,285	2,626,814	-458,529	-17.5
Clearances, Vessel Tonnage	2,244,257	2,754,107	-509,850	-18.5

Of the 398 entrances, 26 were in ballast, and 372 carried cargo, while the 422 clearances included 52 in ballast and 370 with cargo. The proportion of entrances in ballast was practically

the same in July, 1932, and last year, but in the clearances the proportion was 12 per cent., as compared with 20 per cent. last year.

Entrances and clearances during the fiscal year ending June 30th, 1932, were 8 per cent. under the previous year.

	Fiscal Year 1932	Fiscal Year 1931	Net Change	
			Amount	Per Cent.
Entrances, No. of Vessels ...	5,711	6,211	-500	-8.0
Clearances, No. of Vessels ...	5,856	6,372	-516	-8.1
Entrances, Vessel Tonnage	28,812,114	30,212,326	-1,400,212	-4.6
Clearances, Vessel Tonnage	29,180,057	30,515,159	-1,335,102	-4.4

Commerce at Port Newark.

The receipts of cargo by vessel at Port Newark during the month of July, 1932, amounted to 15,927 tons, which, compared with 63,873 tons in the same month last year, indicates a decline of 75 per cent. Included in these water-borne receipts were 6,068,000 board feet of lumber, which was 52 per cent. less than that of July, 1931, and 6,825 tons of cargo other than lumber, being 85 per cent. under the July, 1931, figure of 44,867 tons. Shipments out of Port Newark by vessel amounted to considerably more than last year, being 7,237 tons, compared with 825 tons in July, 1931. Twenty-six steamers arrived at Port Newark during the month, as against 18 a year ago.

Inland shipments of lumber from Port Newark amounted to 10,717,000 board feet, of which 3,500,000 feet moved by railroad, and 7,217,000 feet moved by truck. Inland shipments out of Port Newark, of merchandise other than lumber by railroad and truck, amounted to 7,638 tons, as against 2,570 tons in July last year.

A comparison of figures for the fiscal years ending July 30th, 1932 and 1931, shows a net gain of water-borne receipts of 8 per cent., the falling off in lumber being offset by increases in cargo other than lumber.

	Fiscal Year 1932	Fiscal Year 1931	Net Change	
			Amount	Per Cent.
All Commodities (Tons) ...	538,472	487,616	+40,856	+8.4
Lumber (Board Feet) ...	166,106,000	207,307,000	-41,201,000	-19.9
Other Commodities ...	279,313	176,656	+102,657	+58.1

Steamship Passenger Traffic.

During the month of June 14,712 aliens departed abroad via the Port of New York, or more than twice the 7,156 aliens that arrived at this port in that period. The foreign travel movement of both aliens and United States citizens in and out of the port since January 1st up to the end of June totals 279,218 passengers, which is approximately 57,000 less than the number reported for the first six months last year.

	June, 1932	June, 1931
INBOUND—		
Aliens, Immigrant ...	1,643	2,168
Aliens, Non-Immigrant ...	5,513	8,035
U.S. Citizens ...	13,486	17,959
Total ...	20,642	28,162
OUTBOUND—		
Aliens, Emigrant ...	4,603	2,485
Aliens, Non-Emigrant ...	10,109	12,014
U.S. Citizens ...	19,932	21,118
Total ...	34,644	35,617

Total Inbound and Outbound	55,286	63,779
Total for Six Months	279,218	336,449

According to the United States Shipping Board, 71,113 passengers sailed on foreign cruises from the Port of New York last year, or over 95 per cent. of the total number reported from all Atlantic, Gulf and Pacific ports for the period.

Cruises to the Canadian Atlantic provinces and to the West Indies proved the most popular, accounting for 40,000 or more passengers. The Bermuda cruises proved the next popular.

Steamship Sailings.

While a total of 1,315 sailings in all services from the Port of New York is reported for July, this is approximately 17 per cent. less than the 1,590 sailings reported for that month last year. The major part of this decrease can be directly charged to the reduction in domestic service, particularly via the Long Island Sound to New England points.

Foreign cruises, however, continue to increase, and almost twice as many are reported this July compared with the number reported in that month last year. Exactly 19 of these pleasure cruises to the West Indies or other foreign waters sailed from this port during July, carrying over 10,000 vacationists.

Tankers in the coastal trade also show an appreciable increase in July over the same month a year ago.

The Port of New York—continued

A total of 76 vessels sailed from this port on Saturday, July 9th, the peak day of the month. Of these, 37 were in foreign service and included 5 to the United Kingdom, 5 to North European ports, 1 to France, 1 to the Adriatic, 11 to Caribbean-Mexican ports, 2 to South America, 1 to Australia, 5 to Canadian Atlantic ports, 1 cruise and 1 tanker.

Grain Exports.

Exports of grain, both domestic and Canadian, from the Port of New York in the month of June, 1932, amounted to 4,418,000 bushels, as against 5,697,000 bushels last year, a drop of 22 per cent. The volume of exports of domestic grain continues to show a substantial gain, but Canadian grain in transit is falling off.

	June 1932 Bushels	June 1931 Bushels	Net Change Amount Bushels	Per Cent.
Domestic and Canadian Grain	4,418,000	5,697,000	-1,279,000	-22.5
Domestic Grain	1,497,000	567,000	+930,000	+164.0
Canadian Grain	2,921,000	5,130,000	-2,209,000	-43.1

Comparative figures for the fiscal years ending June 30th, 1932 and 1931, show a net decrease of 18 per cent.

	Fiscal Year 1932 Bushels	1931 Bushels	Net Change Amount Bushels	Per Cent.
Domestic and Canadian Grain	51,721,000	63,278,000	-11,557,000	-18.3
Domestic Grain	15,239,000	3,931,000	+11,308,000	+287.7
Canadian Grain	36,482,000	59,347,000	-22,865,000	-38.5

Receipts of Grain and Visible Supply at the Port of New York.

Receipts of grain, including both domestic and Canadian, at the Port of New York in July, 1932, amounted to 2,684,880 bushels, which is 52 per cent. less than was received in July of last year. Railroads delivered 720,300 bushels, while 1,963,780 bushels arrived via the canal, and 800 bushels of Argentine corn was received by ocean steamer.

Receipts (Bushels).

	July 1932	July 1931	Net Change Amount	Per Cent.
Wheat	1,749,332	4,893,432	-3,144,100	-64.3
Barley	1,700	398,000	-396,300	-99.5
Corn	729,080	111,500	+617,580	+553.8
Oats	182,118	147,400	+34,718	+23.5
Rye	22,700	1,500	+21,200	+1,413.3
All Grain	2,684,880	5,551,832	-2,866,952	+51.6

Receipts for the first seven months of this year, January to July, compared with those of the corresponding period in 1931, were as follows:—

Receipts (Bushels).

	January-July 1932	1931	Net Change Amount	Per Cent.
All Grain	22,720,976	35,233,132	-12,512,156	-35.5
Wheat	19,260,059	29,571,932	-10,311,873	-34.9
All Other	3,460,917	5,661,200	-2,200,283	-38.9

During the first seven months the volume of grain arriving via the canal was 11,537,111 bushels, as compared with 19,446,432 bushels in the same period last year, a falling off of 41 per cent. The falling off in the volume of grain arriving by rail was 29 per cent., indicating a tendency toward preponderance of rail movement rather than canal this year.

The visible supply of grain in the port including Canadian, both in elevators and afloat, on July 30th, 1932, and on August 1st, 1931, which is the nearest comparable date, was as follows:

Visible Supply (Bushels).

	July 30 1932	Aug. 1 1931	Net Change Amount	Per Cent.
Wheat	3,185,000	3,170,000	+15,000	+0.5
Barley	4,000	61,000	-57,000	-93.4
Corn	464,000	—	+464,000	—
Oats	136,000	42,000	+94,000	+223.8
Rye	285,000	65,000	+220,000	+338.5
All Grain	4,074,000	3,338,000	+736,000	+22.0

North-East Coast Notes.

Decrease in Idle Shipping on the Tyne.

IT is pleasing to be able to record that in the middle of September there was a decrease in the total number of idle craft lying in the Tyne, from the maximum of 180 to 165. This decrease of 15 vessels represented about 30,000 tons, but of this a proportion left the river to be broken up. It is too early to state whether that improved state of things will continue, but at that time there was also a slightly better movement in the charter market. The report submitted to the Tyne Commission at their September meeting showed that at the end of August there was a decrease of three vessels and 2,612 tons compared with July.

Developments and Improvements.

Sir Arthur Sutherland stated at the annual meeting of the Tyne-Tees Shipping Co., Ltd., that the company had bought the land from their present quay at Gateshead right to the Swing Bridge, and hoped ultimately to extend their premises right along. He added that they had got satisfactory terms with Gateshead Corporation and made a mutually good bargain.

The London and North-Eastern Railway Company have placed a contract with Messrs. Head, Wrightson and Co., Ltd., Teesdale Iron Works, Thornaby-on-Tees, for an electrically operated telescopic type anti-coal-breaker for use at North Blyth Staiths.

The contract for the improvement of Seahouses Harbour, Northumberland, which was initiated by Sir Walter Runciman, has been placed with Messrs. Holloway Bros., of London, who built the Tweed Bridge in 1928. The scheme is estimated to cost £21,000.

Wear Trade Statistics.

The trade report for the seven months of this year just issued by the Wear Commission show coal and coke shipment of 2,743,545 tons, against 2,692,782 tons in the previous year, an increase of 50,763 tons. The total imports amounted to 165,934 tons, compared with 168,420 tons in the corresponding period last year.

Details of the imports were: Timber, 53,598, as against 35,853 tons; grain, 2,845 tons, as against 2,283 tons; esparto, 12,344 tons, as against 10,178 tons; iron ore, 1,916 tons, as against 13,228 tons; cement, 11,509 tons, as against 11,438 tons; petroleum, 37,902 tons, as against 51,038 tons; wood pulp, 2,959 tons, as against 2,412 tons; iron and steel, 2,559 tons,

as against 4,238 tons; and sundries, 40,302 tons, as against 37,752 tons.

Exports during the present year ended July totalled 31,689 tons, compared with 39,789 tons. Details are: Machinery, 691 tons, as against 2,763 tons; iron and steel, 948 tons, as against 1,828 tons; pitch and tar, 9,470 tons, as against 15,519 tons; creosote, 1,969 tons, as against 3,015 tons; petroleum, 11,445 tons, as against 11,929 tons; and sundries, 7,166 tons, against 4,735 tons.

The steamer "Chartered," owned by Messrs. Stephenson, Clarke and Co., Ltd., London and Newcastle, arrived at Sunderland on August 17th at 5 a.m. and started to load at the Wear-mouth Colliery staiths at 6 a.m. Loading was completed by 1 p.m., having taken on board 2,840 tons of coal (including bunkers) in 7 hours.

Hartlepool and Tees Trade.

Despite a heavy falling off of timber in August at the Hartlepool, the imports for the first eight months of the year are substantially above the figures for the corresponding period of 1931. So far this year 217,890 loads have been discharged, against 178,300 loads in the first eight months of last year, an increase of 39,590 loads, equal to 22 per cent. Pit props, which were responsible for 153,356 loads of the total, compared with 98,694 loads a year ago, have enabled such good returns to be issued. There is little change in deals, but the imports of sleepers fell from 20,435 loads last year to 1,731 loads, an indication of the restricted purchasing by the railways. The coal exports for the eight months total 2,119,244 tons, an increase of 53,423 tons. The figures for August were 256,685 tons, an increase of 17,205 tons over last year.

The gradual improvement in the Cleveland iron and steel trades is reflected in the exports for August, the overseas shipment of finished steel from the Tees being the heaviest recorded this year. The aggregate tonnage of iron and steel shipped from the Tees in August was 35,392 tons, compared with 35,991 tons in July. This total is gratifying in view of the holiday interruptions. Both coastwise and foreign shipments of pig iron showed a slight increase, but the aggregate was only 7,296 tons, compared with 6,383 tons in July, and it is already certain that September will record a further advance. It is noteworthy that the iron and steel imports to the Tees for the ten months ended August 31st last were 112,553 tons, compared with 141,182 tons in 1930-31.

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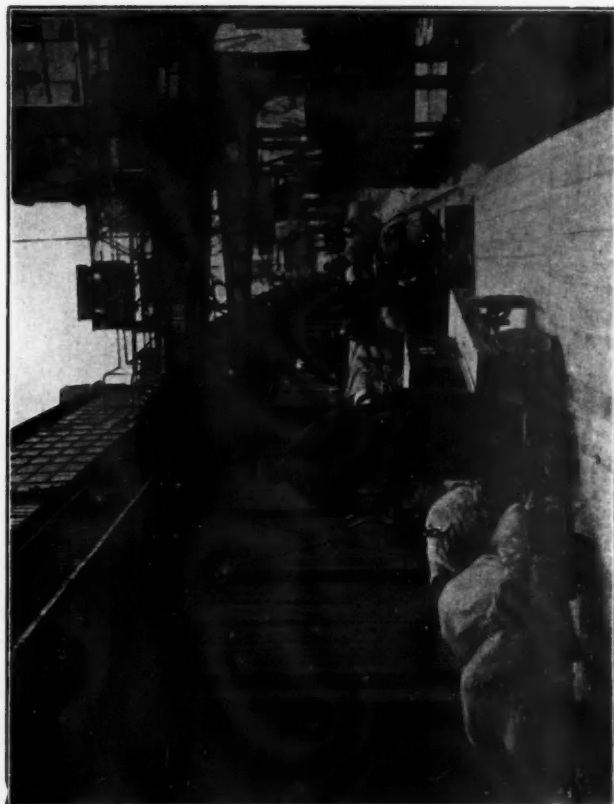


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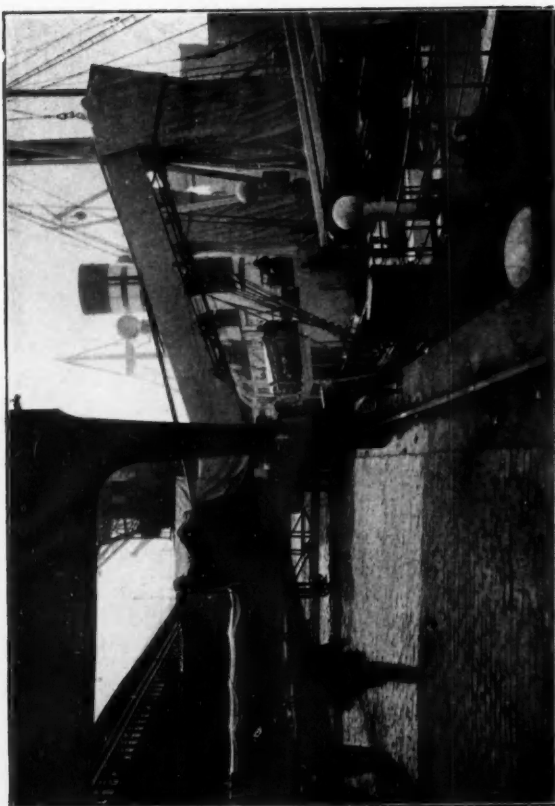
The Port of Hamburg



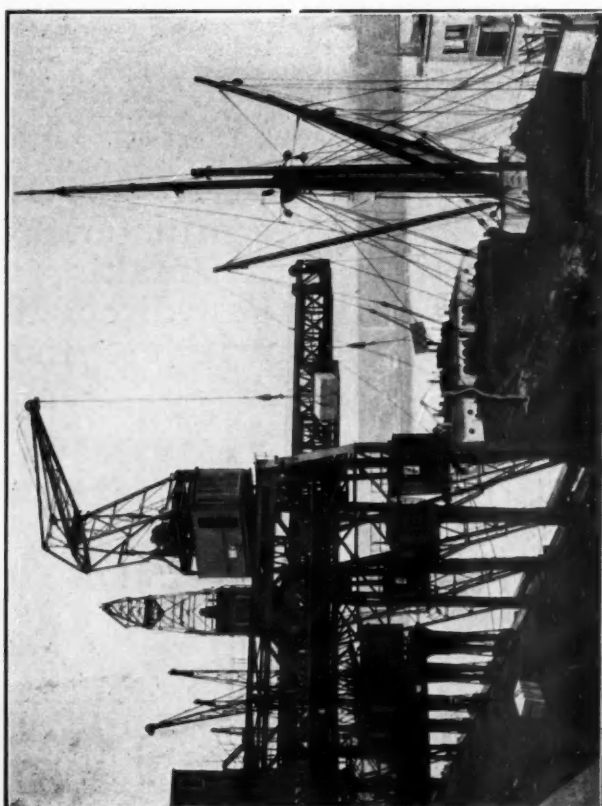
Packing Cases are transported within the Quay Sheds with the aid of Electric Travelling Cranes.



The Electric Truck used for Transportation within the Quay Shed.



Elevators and Conveyor Belts used for Discharging Unpacked Bananas with protection against climatic influences ensure that these delicate cargoes receive adequate treatment.



Triple Cranes consisting of Luffing-Slewing Crane and Two Travelling Crabs are the last word in Efficiency.

The Port of Hamburg (continued from page 346)

The following pages contain descriptions of the most important and most notable structures in the Port of Hamburg, with some details concerning their mechanical equipment

Harbour Works and their Mechanical Equipment The Quays.

GENERALLY speaking, the fundamental design at the bottom of all quay installations in the Port of Hamburg is the same throughout its various parts. Fig. 1 shows a cross section through one half of the narrow peninsulas equipped with quays on both sides as they have been built hitherto. A solid quay wall separates the land from the water. It rises almost perpendicularly, and its outline is adapted to the shape of a ship's hull. The surface of the land in the modern sections of the harbour area lies practically everywhere about 13-ft. above M.H.W. and about 20-ft. above M.L.W. So high a level was required as a precaution against the tides. The harbour area may therefore be said to be practically safe from inundations.

basins has necessitated numerous changes in the design of the quay walls as regards their measurements, the material used for their construction, the methods of their foundation, etc.

The modern quay walls used in the Port of Hamburg are made of concrete of cement and pebble stone with basalt facings and are supported by pile foundation grills (Fig. 2), this method of foundation being most suitable for the conditions prevailing in the alluvial soil of the Elbe lowlands. The top surface of the layer of sand which formed the original bed of the Elbe and which was subsequently covered by layers of peat and clay of various thicknesses is situated at various depths, but as this layer is the one by which the whole structure has to be supported, it is also that which has to be reached by the parts that form the foundation of the walling. The piles are driven into the sand to a depth of 10 to 13-ft., and their length can always be fixed in accordance with the condition of the soil at each

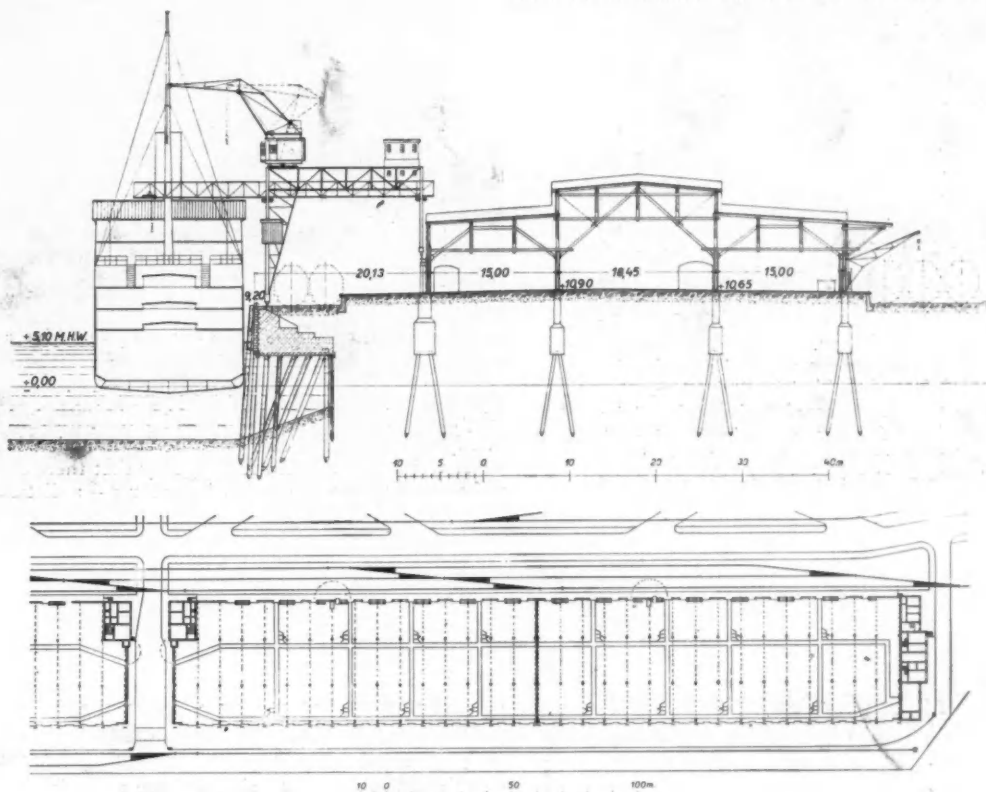


Fig. 1. Cross Section and Ground Plan of a Modern Quay Shed.

The provision of raised platforms on both sides of the covered sheds permits the rapid loading and unloading of carts and railroad trucks on the water as well as on the land side. Thus the utmost freedom is secured in regard to the handling of the cargo, and an effective protection has been provided against the intrusion of rain water. The material used for levelling up the sites occupied by the transit sheds up to the level of the truck platforms consists, for the most part, of dredged sand. In the case of the latest type of sheds the average width of the floor measured between the outer edges of the loading and unloading platform extensions is about 195-ft., and in some sheds as much as 230-ft. Between the water's edge and the front platforms of the sheds there is a paved road, from 23-ft. to 33-ft. wide, provided with one or two railroad tracks. The gantries of the electric cranes span the road and the shed platforms, so that the entire width of the former is available for the handling of the cargo. As a rule, three railroad tracks of a combined width of 43-ft. are laid on the approach road that runs along the middle of the quay peninsula throughout its length. The width of this road, including the footpaths lining it, is about 40-ft. The quay facilities on both sides of it are arranged more or less symmetrically. Generally speaking, the total width of the peninsulas ranges between 530 and 600-ft., the exact figure in each case depending on the state of development reached by the type of basin concerned.

The Quay Walls.

The first detail that claims our attention in connection with the description of the quays is the quay wall. It stands to reason that the constantly increasing depth of the harbour

particular spot, so that the quantity of the material used can be kept within economic limits. It is understood, of course, that their tops lie below the bed of the water spaces in the harbour.

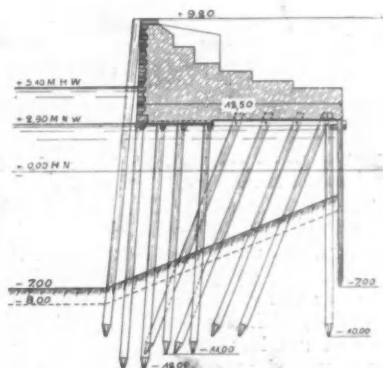


Fig. 2. Cross Section of a Quay Wall for maximum depth of water.

The upper limit of the wooden foundation, i.e., the height of the plank covering placed on the horizontal grillage supported by the pile structure, is determined by the depth down to which the wood is liable to rot. This means that it lies about 3-ft. above low water, at which level the wood is exposed to contact with the air for short periods only, so that it cannot become

The Port of Hamburg—continued

dry and cannot rot. It has nevertheless been thought advisable to keep the woodwork as much as possible even below the limit thus fixed. Here we must make a distinction between quay walls built in enclosed foundation pits and those built in open water, the level of which is subject to the rise and fall of the tides. In the former case the depth at which the wood construction ends and the masonry begins is lower than in the latter.

The continuation of the structure separating the water and the soil below the masonry is formed by a wooden wall. As a rule, it lies in the rear of the quay walls, although in some cases the front is also provided with it as a protection of the foundation piles against damage through ice. The walls in question consist of grooved and tongued planks, or—where a thickness exceeding 10-in. is required—of square piles placed together as closely as possible. The maximum thickness of the wall is about one foot, and its height between the masonry and the soil is always limited by the amount of pressure exerted by the latter. It follows that the thickness of the masonry level with the horizontal grill is proportionate to the depth of the harbour basins, and is greatest in the deepest and most modern ones. It has increased from 12 to 40-ft., while the depth of the basins at low water has increased from 20 to 35-ft., and permits the row of piles underneath the masonry to be arranged as conveniently as possible.

The walling referred to is supported by trusses consisting of two piles each which are rigidly joined by a wedge and an iron ring, and which enter the body of concrete. The object of the trusses is to absorb the greater portion of the pressure of the soil against the wall. In front of them there are, in the case of the modern type of walls, five rows of piles arranged lengthwise which support the horizontal grillage. The average diameter of these piles is from 1-ft. to 1-ft. 3-in., and their slope is either 15:1 or 2.5:1. Some of them have had to be driven into the river bed as much as 39-ft. below Hamburg zero, and emerge to a height of 12-ft. above it, so that their length is about 56-ft.

The total height of the quay walls, including the foundation piling, is about 69-ft., which is equivalent to that of an ordinary five-storeyed apartment house.

The body of masonry tapers in an upward direction in proportion as the pressure of the soil behind it diminishes. The upper and lower edges of its frontage consist of granite slabs, whilst the remaining part of the front surface is faced with basalt columns whose thickness ranges between 10 and 14-in. At intervals varying between 120 and 160-ft., the entire body of masonry is intersected by joints intended to prevent cracks and to absorb dangerous stresses that might arise through changes in the temperature.



Modern Luffing Cranes provide a Maximum of Mobility in the Handling of the Cargo.

The quay walls would but imperfectly fulfil their purpose of enabling ships to load and unload their cargoes if they were not fitted with special mooring equipment. Cast-steel mooring palls and rings for the use of sea-going vessels are provided at distances of not less than 80-ft., and chains for the use of smaller craft at distances of not less than 26-ft. Guarding piles and guarding beams arranged at distances of about 30-ft. protect vessels from being damaged when rising and falling with the incoming or outgoing tide, whilst ladders provided at distances of about 165-ft. give direct access to the quay walls from vessels berthed there. Where the mooring palls are attached to the masonry, the latter has been adequately strengthened. In order to prevent water from accumulating behind the walls, drain pipes are laid throughout the masonry at distances of about 40-ft.

A recent innovation in connection with the basins for sea-going vessels is the ferro-concrete quay wall of Windhukhai,

Südwesthafen. In the past ferro-concrete walls had only been constructed in connection with some of the basins with barge-depth (Rosskanal, Hofekanal).

The total length of the quay walls facing deep-water basins is about 22 miles.



Heavy Bales of Rags are piled up with the aid of Electric Winches.

Generally speaking, the quay walls facing basins with barge depth—the total length of which is about 10 miles—are of similar design, although in this case the construction is less massive.

It will be seen from the foregoing that there are about 32 miles of quay walls in the Port of Hamburg—a distance equal to half the length of the part of the Elbe from Hamburg to Cuxhaven or to the length of a more than two hours' steamer trip.

Owing to the fact that the smaller kinds of sea-going vessels are gradually ousted by those of larger size, a beginning has been made in recent years (on Versmannquai, Baakenhafen) of strengthening existing quay walls by additional masonry on the water side and by widening the foundation by another row of piles and an iron sheet piling behind the wall, the aim being to increase the depth of water in front of the walls.

The Quay Sheds.

The quay walls enable vessels to take up their positions within reach of the cranes on shore, there to be loaded or discharged. It does not often happen that the merchandise is directly transferred from the land carrier to the ship or *vice versa*. The rule is that it is taken to a covered and sheltered place some time before it is stowed away on board or after it has been discharged, as the case may be, and that it is retained there for a short space of time. This purpose is served by the quay sheds. It is of very great importance that their design and equipment should satisfy every reasonable requirement, because the safety and punctuality of all quay operations largely depend on it.

Their principal feature is that they consist of one single room only, and that they possess no upper floors. These characteristics have been strictly adhered to, in spite of the reiterated suggestion that some other type should be tried. There are, however, two exceptions to the general rule, viz., Fruit Sheds C and 24, which, on account of the special circumstances of the fruit trade, have been provided with upper floors.

The principle of restricting the accommodation to one single room whose floor is level with the platforms of the railroad trucks is based on the following considerations: It is not intended that merchandise should be stored in the sheds for any prolonged period of time. Goods to be loaded are only to arrive a few days prior to the sailing date of the ship, and discharged cargoes are only to remain there until they are taken possession of by the consignees. All that is needed, therefore, is to provide so much space per ship's length as will comfortably hold a full ship's load of cargo. Experience has shown that in the case of the biggest vessels a width of 160-ft. is sufficient for this purpose. The construction of sheds of such width presents no technical difficulties, and the expenditure required does not make them unremunerative. The argument that the addition of an upper floor would permit a reduction of the necessary width by 50 per cent. is not valid, because the supporting capacity of the second floor would have to be much less than that of the

The Port of Hamburg—continued

ground floor. The latter rests directly on the solid earth, and the goods deposited there do not exercise any pressure on any specially provided supports, so that its supporting capacity is unlimited. In practice, indeed, loads of 8 tons per square yard are nothing unusual. An upper floor, however, could scarcely support more than 2 tons per square yard, no matter how strongly it were designed, and would also require more massive foundations. Thus the gain would be slight, but the additional expense and the resulting drawbacks would be very considerable. The latter would be such as to interfere with the smooth handling of the goods. The principal features of an efficient quay shed must be: wide spaces permitting easy access, a minimum number of intervening supports, and a maximum of daylight. Only the single-floor sheds satisfy these requirements. In sheds having an upper floor, numerous supporting posts would have to be provided, and these would obstruct the work carried out on the ground floor. Besides, it would be necessary to use artificial light even in the daytime. Drawbacks such as these would be too high a price to pay for the advantages derived from diminishing the width of the sheds.

The foregoing considerations have given rise to the creation of the type of quay shed that is found in the Port of Hamburg. The measurements given below are those of Sheds 82 and 83 on Chilekai, but those of all the more recently constructed sheds are practically the same. The length of the shed is 1,000-ft., and the width between the front and back walls 160-ft. A solid fireproof wall divides it into two halves, called A and B respectively, each of which is 500-ft. long. Two rows of supports parallel to the front and back walls divide each half into a central nave (80-ft. wide) and two aisles (50-ft. wide each). The ceilings of the aisles are lower than that of the nave. The central nave and the front and back walls of the shed afford opportunities for admitting the light sideways, so that the shed is always amply and uniformly lighted. This feature, as has already been pointed out, is exceedingly important in connection with the work going on in the shed, e.g., weighing, sorting, testing, repairing damaged packages, etc. For the same reason a large number of powerful incandescent lamps have been provided for work after dark. The wooden floor rests directly on the solid earth and is independent of the supporting posts and their foundations. Truck paths made of sheet iron intersect it in both directions. The roof trusses are about 30-ft. apart from one another. These, as well as the whole roof, are constructed entirely of wood, except that the lower parts of the supporting posts are made of iron. They are fixed to the concrete foundations, and these in their turn are founded on pilings. The solid rear wall of each shed has 32 openings—corresponding to the number of trusses—each of which can be closed by a sliding door. Through them the goods can be transferred to the 9-ft. platform outside the shed and from there to the cart or railroad truck. In front of the platform there are three harbour railway tracks, connected by sets of points. Part of the road space is

paved, so that it may also be used for carts approaching the shed platform. The front or waterside wall of the shed, up to the girder for the crane frames, is entirely made up of sliding doors of corrugated iron, which may be slid behind one another in pairs, thus making it possible to provide entrances anywhere. The front platform is really a continuation of the covered floor, but without the covering. It has a width of 33-ft., and, like the rear platform, rests on a supporting wall. Between the front platform and the edge of the quay wall there is the 33-ft. paved roadway provided with two railroad tracks. The space above the road and the platform is spanned by the semi-portals of the cranes, the horizontal beams of which travel on the shed itself, as mentioned above, whilst the leg runs on a rail close to the water's edge.

Each quay shed terminates, at one of its two extremities, in a solid building containing offices, workmen's common rooms, dwelling quarters for officials, workshops, etc. In front of it there is another platform accessible to carts. A passage running through the whole building connects it with the floor of the shed, so that goods may also leave the latter on that side. Still more convenient, however, is the corresponding arrangement at the opposite end of the shed where the shed platform is the direct continuation of the floor space, except that one corner of the shed—or, in the case of the middle sheds, two

such corners—are used for management purposes. The passage between two neighbouring sheds is wide enough to enable carts to turn round in it and motor lorries with their trailers to obtain access to the road along the water's edge. The crane rail girders are carried across these passages, and the waterside shed platforms of two neighbouring sheds can also be joined by flap bridges, so that all the operations involving the use of cranes can be carried out without being hampered in any way.



The Tipping Devices for Coal Trucks ensure that the Coal is handled with the greatest possible care.

The covered and lockable floor space of a shed as described above occupies an area of $3\frac{1}{4}$ acres. Its length equals that of two sea-going ships, and enables these as well as a few smaller craft to be attended to simultaneously. The length of the railroad tracks connected with it is about 5,000-ft., and that of the roads for vehicular traffic about 1,700-ft. Carts may approach any of the four sides of the shed, subject to the provision that the railway company is entitled to preferential treatment as regards the two long sides. The provision of railroad tracks on both these sides permits the separation of goods requiring to be stored in the shed from such as have to be directly transferred from the vessel to the railroad or *vice versa* on account of their weight, bulk, or dangerous character. The systems of track are generally connected at the pierheads by means of turntables, and on the very long quays, e.g., Petersenquai, Asiaquai, Amerikaquai, and O'Swaldquai, there is an additional connection by means of sets of points between the sheds to facilitate operations. The need for two tracks on the waterside has only arisen in recent years, and most existing quays are provided with only one such track. Some of the earliest quays, indeed, are without any tracks at all on that side. On the other hand, some quays are provided with a larger number of tracks in the rear of the sheds—five being the maximum—for marshalling and shunting purposes.

The following figures illustrate the development of the Hamburg quay sheds as regards their measurements during the sixty years that have passed since the first modern shed was built:—

Date of Opening	Name of Quay	Width of Sheds in feet	Length of Sheds in feet
1866	Sandthorquai	49	560
1872	Kaiserquai	73	700
1877	Hubenerquai	84	700
1888	Versmannquai	98	730
1898	O'Swaldquai	112	860
1907	Grevenhofufer	138	880
1909	Bremer Kai	160	880
1922	Rossquai	160	1,070

The various types of sheds were always able to cope with the maximum needs of traffic at the time they were built, and as the vessels now frequenting the Port of Hamburg range from large sea-going steamers to small coasters, the accommodation meets the requirements of every type of vessel. The earliest and smallest sheds are by no means obsolete. Indeed, owing to their proximity to the business quarters of the city, they are particularly valuable, and to-day they are just as suitable for



A Modern Luffing Crane.

The Port of Hamburg—continued

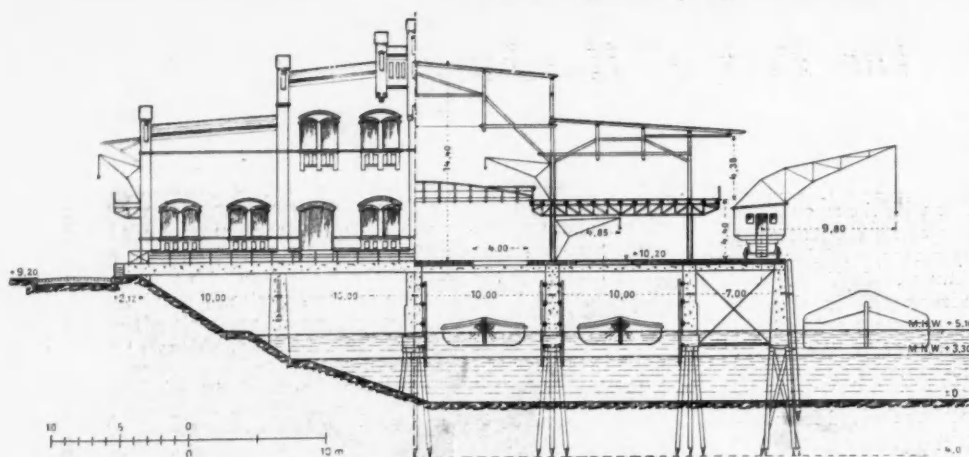


Fig. 3. Cross Section of Rivercraft Shed, Prager Ufer.

the handling of vessels to and from European ports as they were sixty years ago. Some time before the war several of the earliest sheds (Sheds Nos. 2 and 3 on Sandthorquai) were rebuilt, but the only important changes made in their design were the replacement of the open water front by solid walls, and that of the cranes travelling along the quay road by semi-portal or gantry cranes. A similar modernisation has been effected in more recent years in connection with Quay Sheds Nos. 11 and 12, the main advantage thus gained being the increased mobility of rail and lorry traffic on the water side.

Another innovation has been introduced quite recently in connection with Quay Shed No. 59 on Windhukkal, Südwesthafen, inasmuch as this shed—which was not completed until a short while ago—has been built of ferro-concrete, thus deviating from the former principle of using timber as the main building material.

The sheds for special purposes to which reference has been made elsewhere differ to some extent from the ordinary type as far as their design is concerned. Their number includes some sheds particularly typical of the conditions in the free port of Hamburg. Although used for handling merchandise transported by the sea, they do not directly serve the purpose of despatching sea-going ships. Thus, for instance, individual consignments intended to be conveyed *en masse* by shallow barges to vessels berthed "in mid-stream" or alongside quays situated a considerable distance from the city are collected in the two exporting sheds (Ausfuhrschuppen). In the so-called distributing shed (Verteilungsschuppen) export goods which arrive from non-German countries by rail in loaded groupage transports are separated from each other for distribution among the various loading places of the sea-going ships, to which, as a rule, they are carried over the system of the Port of Hamburg Railway. The opposite purpose is served by the collecting shed (Sammelschuppen), inasmuch as it is there that the consignments of imported goods intended for consignees outside the German customs area are grouped together as assembled L.C.L. shipments in loaded railroad cars, to be transported thus through Germany. It will be seen from the foregoing that the sheds just referred to tend to stimulate, on the one hand, the system of groupage transports (which holds out valuable advantages as regards the rates of freight) and, on the other, the rail-borne goods traffic from one foreign country to another, as such transports are not subjected to any treatment by the customs officers at either frontier of Germany. The Export Shed No. 1, on Magdeburger Hafen, the Export Shed No. 2, on Kirchenpauerquai, and the distributing shed on Holthusenquai have a triangular ground plan. In the last-named sheds and in the long-stretched collecting shed on Magdeburger Hafen the railroad has been introduced, as it dominates the methods of work applied there.

The greatest deviation from the normal type, however, is in Fruit Sheds G and 24 (a cross-section of No. 24 Fruit Shed is shown in Fig. 4), which are the only sheds used for the despatch of sea-going vessels that have been provided with an upper floor. This arrangement was made in compliance with the wishes of fruit merchants, whose requirements the two sheds are chiefly intended to satisfy. Both floors are used for the discharge of fruit steamers, the cargoes of which leave the sheds exclusively by rail or by lorries. No loading of sea-going vessels or rivercraft takes place in connection with the fruit traffic, so that we have here an example of a traffic that moves in one direction only. This circumstance greatly facilitates the despatch of the steamers from two floors. The width of Shed 24 is 83-ft. The upper floor is made of reinforced concrete and has a

carrying capacity of 1,900 lbs. to the square yard. The discharge of the goods on to the upper floor is effected with the aid of a gallery on the waterside. In the rear the goods are transferred to the railroad trucks or road vehicles by means of cranes with travelling crabs. Goods are conveyed from one storey to the other by means of lifts and spouts. The shed is provided with central heating. The temperature within can be raised to 43 degrees F. above zero when the outside temperature is 4 degrees F. below zero. This shed is the first to be equipped with a ventilation plant of great efficiency, by means of which the air is continually renewed.

Some of the privately owned or privately managed sheds located on water with barge depth are also of the two-storeyed type. The most important of them is the shed on Prager Ufer, Moldauhafen (Fig. 3). In this case, however, the upper storey does not cover the whole width of the shed—which is 130-ft.—but only the two aisles. The two galleries thus formed are connected by several iron bridges. A special feature of the shed referred to is that it is partly built above the water so that two rows of harbour lighters can be towed underneath where they are loaded and discharged through the hatchways in the floor. The up-river barge cargoes, on the other hand, are handled from the platform on the waterside.

The number of existing quay sheds for the despatch of sea-going vessels is 87. Their total length is 11½ miles, and the covered floor space contained by them is 160 acres. In addition, there are 13 quay sheds on basins for barge-depth, their total length being 1 mile and their useful floor space being 17½ acres, so that altogether 100 quay sheds, of a total length of 12½ miles and a total storage capacity of 177½ acres, are available in the Port of Hamburg.

Quay Equipment.

The principle of combining the utmost possible speed in the handling of the cargo with the provision of every safeguard for its protection against damage, which underlies the design of all the quay sheds, has also been applied to their equipment. Experience has shown that the intelligent use of mechanical devices not only reduces expenditure, and therefore permits the charging of low fees for the various quay operations, but that it also serves to favourably affect the "rhythm" of the work performed. This knowledge has been translated into practice wherever an opportunity presented itself. Many a novel device and many a new idea owe their origin to the experience gained by the Hamburg port administration. The first electric harbour crane was built in Hamburg, and the twin crane, the triple crane, and—as far as Europe is concerned—the electric truck as used for quay operation, were first introduced by the Port of Hamburg authorities. The aim of these and similar improvements was to eliminate every avoidable delay in working. Thus, for instance, the speed of the crane work has to be correlated to that of the work going on in the sheds in such a manner as to ensure the maximum benefit from both, and stoppages of work have everywhere been reduced to a minimum. It has thus been possible to gradually increase the efficiency of the work performed per man and per hour. It goes without saying that the output figures and the economy factor are constantly checked and that statistical records concerning them are carefully kept.

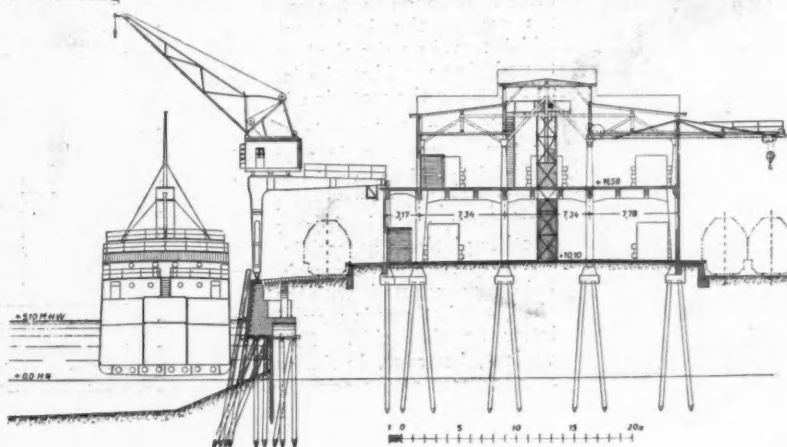
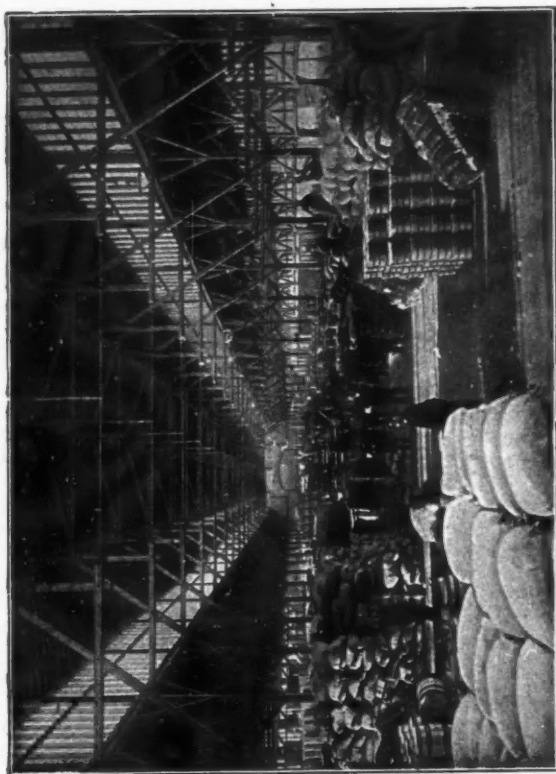
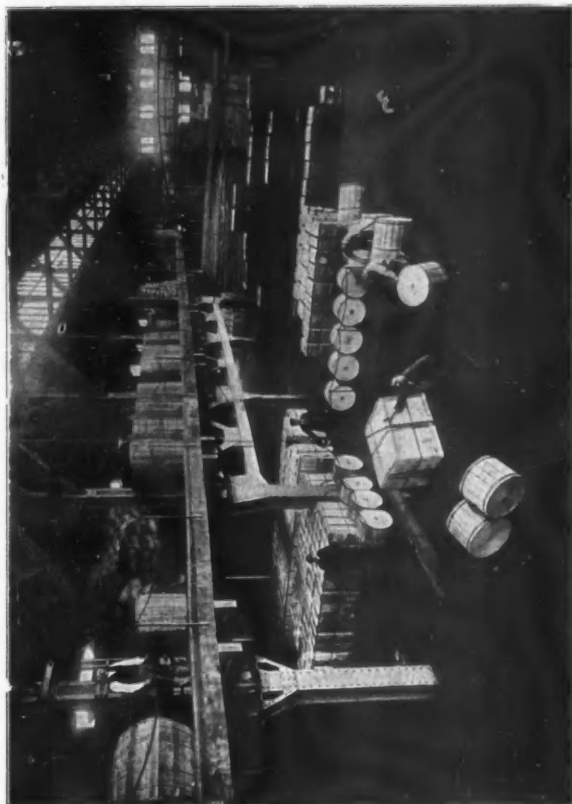


Fig. 4. Cross Section of the Double-storey No. 24 Fruit Shed.

The Port of Hamburg



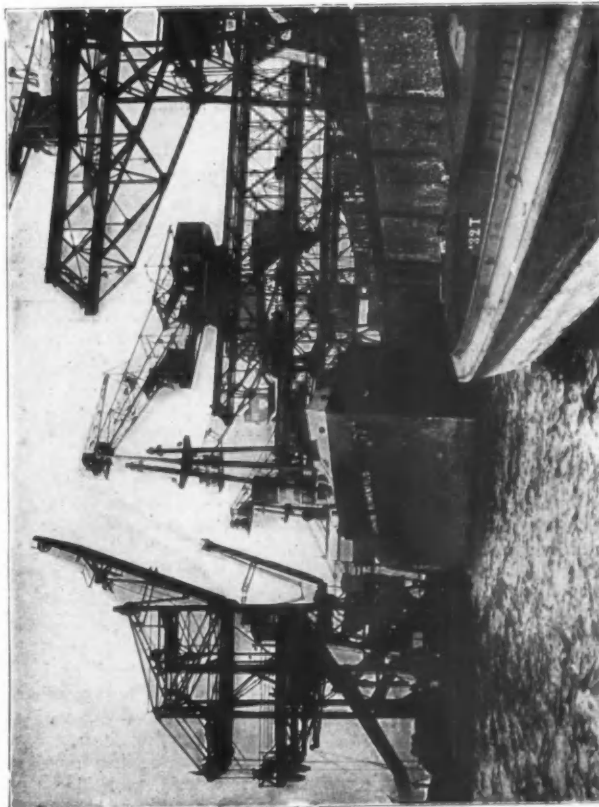
Light and Spacious Quay Sheds are indispensable to the efficient handling of Cargo.



Interior View of Rivercraft Shed, Prager Ufer. The Lighters underneath the Shed receive their Cargoes by way of the Hatches in the Floor.



Double Cranes, consisting of Slewing Crane and Travelling Crab combined, make for an Increase in Efficiency.



A Collier is relieved of its Cargo from the Land and Water Sides.

The Port of Hamburg—continued

Above all, however, Hamburg has never begrudged her port any money when it has been necessary to meet exceptionally heavy demands on it. In Hamburg, as everywhere else, there are frequent occasions when the strain on any particular department is more than usually heavy. The view taken of such occasions is that a very expensive piece of equipment is worth installing, even though it may have to be used to its maximum degree of efficiency only on comparatively few occasions. This applies, for instance, to the despatch of mail steamers, which requires the utmost punctuality. The shipping trade is entitled to claim that its interests in this and in other respects should always receive the greatest attention. In fact, the guiding principle underlying the design of the port has been to reduce to a minimum the time vessels are compelled to stay in the harbour in order to enable them to be utilised as much as possible for their primary purpose, i.e., the carrying of merchandise and passengers.



One of the Stationary Cranes for Heavy Loads handling Agricultural Machinery.

The Cranes.

We propose to start the description of the quay equipment with that of the cranes used in the harbour. Steam cranes have been entirely abolished, because owing to their clumsiness and unremunerativeness they are looked upon as obsolete. Another typical feature is that the distances at which the cranes—which are practically without exception driven by electricity—are placed from one another are so short as is probably the case in no other seaport anywhere. Finally, the efficiency of the transshipment work has been raised to the highest possible degree by increasing the lifting capacity of the quay cranes to 5 tons and by furnishing single crane frames with two and, in the case of the very latest cranes, even with three crane hooks.

The principal features of the standard type of pier crane, as at present developed by the Port of Hamburg authorities in constant co-operation with the manufacturers, may be seen from the following description. The slewing crane whose mechanical parts are accommodated in an iron crane cabin is supported by a gantry (semi-portal) about 16-ft. high. The length of the horizontal arm of the latter ranges between 25 and 58-ft., according to the width of the roadway and the shed platform. The slewing crane has a maximum handling radius varying from 39 to 44-ft. The jib is of the luffing jib type and is extremely simple in its design. The radius of the crane, when fully loaded, can be increased or decreased by 24-ft. 6-in. whilst the slewing movement is in progress. This makes it possible to use a considerable number of cranes when loading or discharging a vessel, to accelerate the work, and to utilise the whole plant so as to be of maximum benefit to the ship and the cargo. The carrying capacity is 3 tons, the lifting speed of the crane when fully loaded is from 2-ft. to 2-ft. 4-in. a second, and the slewing speed is 6-ft. a second. The lifting motor used

is a series motor indicating 28 h.p. at a speed of 400 revolutions a minute. The slewing and rotating movements are brought about independently by two separate motors. The lifting movement is regulated by a hand-lever brake, and the slewing movement by a foot-lever brake. The control mechanism is of the simplest kind. Slewing, lifting, and lowering are all controlled by a single manipulation, all movements taking place in the same direction as those of the crane hook. An automatic disengaging gear prevents the crane from being excessively loaded and thus ensures the maximum stability obtainable. The movements entailed by the adjustment of the crane to its exact position in relation to the ship's hatch are effected by an electric motor. The travelling speed is 6-in. a second. The current used is continuous current of 550 volts (440 volts at Kuhwärder).

Wherever open sheds are still in use, roller cranes are employed instead of gantry cranes.

With the exception of two quays where overhead loop lines are used, the current supply of the roller cranes is obtained by means of underground lines, and the distribution from the main cable is brought about by earth junction boxes and flexible connecting cables. In the case of the gantry cranes, cable connection with junction boxes fixed to the walls of the sheds was formerly the rule. Since the general introduction of the electric traversing gear this method has been replaced by the use of loop lines in front of the upper walls of the sheds and current collectors.

Development, however, did not cease when the type of slewing crane just described had been devised. The necessary increase in the speed of all quay operations, and the special demands made in this respect during the past twenty years, have caused a still more efficient type of crane to be devised. This is the so-called double crane. The principle embodied by these double cranes has met with universal approval, and a large number of suggestions relative to the details of their operation have been put forward, but the Hamburg port authorities have not so far seen their way to modify their original design. The arrangement as adopted by them is as follows:—

The gantry supporting the slewing crane is raised to such an extent as to admit the accommodation of a girder for a travelling crab. The girder may be withdrawn beyond the pier edge above the roof of the shed when not required for operation. The combination of these two devices in such a way that they may be operated independently of one another has resulted in a valuable increase in crane efficiency. The most recent additions to the number of these cranes have carried the principle of independent operation still further by the introduction of tiltable jibs for the slewing cranes. The lifting capacity of the slewing crane and of the crab is 3 tons each. All the various movements, viz., lifting, slewing and luffing the slewing crane, pulling-in and pulling-out the slewing crane jib, lifting the crab and making it travel back and forth, and the movement of the complete plant, are effected independently of one another by electricity.

Once the principle of the double crane had been adopted, the transition to the triple crane was only a question of time. This type contains two crabs instead of one, each of them having its own movable jib. It has been adopted with good success in connection with the quay sheds recently built.

In order to avoid the undesirable operation of two cranes together when loads exceeding 3 tons are concerned, the newest quays have been provided with several cranes capable of lifting 5 tons. The two floating cranes recently supplied for the operation of the Government Quay serve the same purpose. As these are capable of lifting up to 32 tons, they enable vessels in many instances to dispense with proceeding to and from the cranes for heavy loads erected on land, thus saving them both time and money. With a view to making them available at any time and in any place as speedily as possible, they are designed in such a way that they can travel with their own power. They are therefore equipped with Diesel-electric drive and thus represent the most modern type of floating crane in existence.

Shed No. 83, on Chilekai, may be cited as a typical example of a shed provided with modern crane equipment. On the water side the following cranes have been installed: six standard 3-ton slewing cranes with luffing jibs; two cranes of equal type, but each capable of lifting 5 tons; four double cranes of twice 3 tons capacity, and two triple cranes of three times 3 tons capacity, the slewing crane part of the latter being equipped with luffing jib. These 14 cranes have 22 crane hooks. As the length of the shed is about 950-ft., the average distance between two neighbouring cranes is 68-ft., and there is one hook to every

The Port of Hamburg—continued

43-ft. of pier length. Such equipment may be assumed to represent the maximum of movability and adaptability that can be demanded for the purposes of pier operation.

The shed referred to, like all others, is also provided with lifting gear at its rear. As a rule, two stationary electric 3-ton wall slewing cranes are available, and their handling radius extends as far as the second rail track. The most recent sheds,

one 20-ton crane near Reiherquai (Kaiser Wilhelm-Hafen),

one 75-ton crane near Kaiser-Wilhelm-Höft.

In special cases the giant cranes owned by the shipbuilding yards, more particularly the 250-ton crane of Messrs. Blohm and Voss at Steinwärder Ufer, are also available for cargo-handling purposes.

All the giant cranes—like those used in connection with pier shed operations—are driven by electricity. Most of them are of the hammer-head type and are mounted on tower frameworks, except that the 150-ton crane is a jib crane of an older type. The latest of the hammer-head cranes are provided with travelling crabs in the jib, and the highly efficient 250-ton crane of Messrs. Blohm and Voss has, in addition, a separate 10-ton crane travelling on the jib. The longer portion of the jib of this enormous crane can almost be raised to the vertical position, which, however, has hitherto been necessary in connection with shipbuilding purposes only.

Finally, some mention must be made of the lifting appliances with which the quays where the direct transshipment of cargo from ship to rail or vice versa takes place (Freiladekais) have been provided. Generally speaking, they are of the same type as the cranes used in connection with pier shed operations, except that they have had to be mounted on full portals instead of semi-portals because the quays in question have no sheds. These portals have a span extending over one or several railroad tracks. The biggest plant of the kind is that on Holthusenkaai, where all the cranes have a lifting capacity of 3 or 5 tons. They are equipped with single or twin chain grabs, because the cargo handled there consists for the most part of loose or heapable goods, such as coal, coke, and ore. Such automatic grab cranes are also provided in other parts of the harbour, e.g., on the quays specially set aside for the discharging of coal. They may be used to supplement the installations exclusively intended for the transshipment of loose goods whenever an emergency arises.

The following list contains a summary of the lifting appliances available in the port in so far as they are used for goods transshipment, i.e., excluding those used for industrial purposes, viz.:

- (a) 9 giant cranes,
- (b) 938 travelling cranes along the waterside of quay sheds and on the Freiladekais, including 44 double and 3 triple cranes;
- (c) 195 stationary cranes on quays and embankments;
- (d) 632 miscellaneous hoisting appliances in and attached to other buildings (warehouses, custom houses, etc.);
- (e) 186 floating cranes and other hoisting appliances,

making a total of 2,020.

Mechanical Equipment used in the Quay Sheds.

The constant increase in the mechanical efficiency of the quay cranes could not have been turned to any practical advantage if the continued improvement of the equipment used in the interior of the sheds had not kept pace with it. There, indeed, the need for increasing the output by rationalising the methods of operation and by making enhanced use of mechanical power was still more imperative than at the water's edge. The cranes deposit the ship's cargoes on the shed platforms more or less promiscuously in the same order in which they happen to be stowed in the ship's hold, but before they can be conveyed to their proper places in the shed itself they must be carefully sorted according to their marks and qualities and checked in conformity with the particulars contained in the ship's papers. Any mistakes in this work may cause a considerable amount of inconvenience and expense to consignees, and the quay administration must employ every precaution to prevent this. It is therefore unavoidable that the sorting and checking operations involve a material loss of time, and this disadvantage can only be neutralised by making the equipment used for short-distance transports as perfect as possible.

The smaller the individual lots of which the cargo consists, the larger must be the number of separate packages that have to be accommodated in the shed, and the larger must also be the number of separate piles that have to be formed there, as well as the number of passages that have to be kept open between them. Small individual lots, therefore, imply an unsatisfactory utilisation of the available shed space. Equally unsatisfactory results are caused when there is any delay in removing the discharged cargo, or when single lots have to be divided for



The Variety of Mechanical Devices ensures the Careful and Expert Handling of all Cargoes.

1. Three-wheel Truck for General Cargo.
2. Coupling Device for Copper Bars.
3. One-man Truck for Barrels.
4. Grab for Rolls of Paper.
5. Suspension Tackle with Hook for Barrels.
6. Coupling Device for Unpacked Automobiles.
7. Hand Truck with Side Support fixed to it for Unwieldy Goods of Light Weight.
8. Grab for Packing Cases.
9. Hoisting Device for Tall and Heavy Glass Cases.
10. An Unwieldy Packing Case is placed on a Four-wheel Platform for Fragile Packages.
11. Platform for Fragile Packages.

moreover, have a crane of the same type at their narrow ends where most of the vehicular traffic is attended to, but its lifting capacity is 5 tons. The driver's stand, the lifting gear, and the lifting motor for these cranes are all accommodated in the interior of the shed.

In this context brief reference to those cargo-handling cranes may be found useful which are not directly concerned with the operations actually performed in or near the pier sheds.

The giant or mammoth cranes already mentioned—which are used for the handling of very large pieces of cargo—are distributed fairly regularly throughout the harbour, and most of them occupy sites near the easily accessible pierheads. There are nine of them altogether, their positions being as follows:—

- (a) Grosser Grasbrook area.
One 10-ton crane near the eastern extremity of Kaiserquai,
one 30-ton crane near the western extremity of Dalmannquai.
- (b) Baakenhafen area.
One 30-ton crane near Oberhafen-Canal.
- (c) Veddel area.
One 30-ton crane near Amerikahöft (O'Swaldquai),
one 30-ton crane near Kranhöft (Asiaquai),
one 150-ton crane near Kranhöft (riverside).
- (d) Kuhwärder-Ross area.
One 10-ton crane near Reiherquai (Kaiser Wilhelm-Hafen),

The Port of Hamburg—continued

the purpose of being sent to different destinations. The frequent occurrence of such conditions is a true indication of the present unfavourable position of international trade. The stagnation of business means additional inconvenience to the work of the quay operators. Nevertheless, the Hamburg authorities have speedily learnt to adapt their methods to the changes brought about during the past few years. Large though the increase in shed space (about 85 per cent. of the total space) has been since the war, it is not sufficient to meet the increased demands under existing conditions; hence the only possibility of surmounting the difficulties (apart from the improvement in the devices used for short-distance transports) has been to effect a better utilisation of the shed space, i.e., a more economical method of piling up the goods, and this could only be accomplished by improving the equipment employed for this purpose.

Lastly, the work of weighing the individual pieces handled in the sheds play a much more important rôle now than it used to do in the past. The increased number of weighing machines and the increased space required for the business of weighing have necessitated a corresponding improvement in the efficiency of the former.



One of the Floating Cranes of the Quay Administration, capable of moving with its own power, at work.

The three kinds of equipment, therefore, that now demand our attention are the conveyances used for short-distance transportation, the appliances employed for piling up the discharged cargo, and the weighing machines.

Equipment for Short Distance Transports.

As regards the short-distance transportation of goods, it has not been possible, for reasons of practical operation, to eliminate hand-driven devices altogether. The Hamburg authorities, therefore, devoted their attention first of all to the perfection of the hand-driven transportation devices. Different types, each of them particularly suitable for the transportation of a particular kind of cargo, have been introduced, the general aim being to protect all commodities as much as possible from damage by using the equipment most appropriate to their nature. The chief among them are: sack carts, a type that can be used in numerous ways and that has been perfected in every detail; low iron four-wheeled trucks; tall carts with large platforms suitable for wet hides and bulky goods; iron trucks for the transport of bales of dried kips, provided with slanting platforms for hides that have to be piled up in upright fashion; trucks for heavy barrels, permitting the latter—thanks to a special device—to be easily handled by one single attendant; small low four and six-wheeled barrows for the transport of heavy packing cases, and a number of others.

All these various types of hand-driven trucks and carts, however, have to a certain extent been replaced by electric trucks during the past ten years or have been subordinated to them for the purpose of being used as trailers. It is nothing rare nowadays to see as many as thirty electric trucks being employed in one single shed. There are two types of them, viz., those without a platform, which are exclusively used to pull trains of specially constructed trailer carts, and those with a platform which are themselves employed to carry the loads. The driving power for the electric motors is obtained from powerful storage batteries carried by each truck which are sufficient to last for

an eight-hour shift or more. The accumulators are charged at a centrally situated charging station to and from which the batteries are conveyed by motor lorries. In order to avoid any interruption of the service, provision has been made for a number of spare batteries that may be substituted on the spot for the exhausted ones.

The carrying efficiency of most of the trucks is about 3,800 lbs. Two trucks, therefore, are sufficient to transport, at great speed, the entire load of a three-ton crane used to its full capacity. An additional advantage is that the time during which the goods are exposed to the risks of unfavourable weather conditions is reduced to a minimum. Shipping has profited from the introduction of the electric truck by the considerably accelerated despatch of the vessels that is now possible. So long as hand-drawn trucks were exclusively used, the average quantity of cargo that could be handled by one attendant was about 7 tons. Now, however, that electric trucks are resorted to, from 10 to 13 tons is the rule, and even outputs ranging from 14 to 16 tons are no longer exceptions. A somewhat different type of electric truck is the single-axle truck, which requires the attendance of one workman, is provided with two steering handles, and serves the purpose of shifting the position of railroad cars and cranes not yet equipped with their own travelling engines.

Special mention should be made of the discharging plant for unpacked bananas, one of the up-to-date mechanical devices for the transportation of commodities installed in the port. It consists of four elevator and conveyor-belt units and is used for the automatic conveyance of bananas—which are very susceptible to pressure, shocks and the effects of wind and weather—from the ship's holds to the enclosed and heatable pier shed and thence to the railway sidings beyond the shed. On their way to the shed the bananas are effectively protected against climatic influences by canvas wrappings; and whilst they pass through the shed, the bundles can be conveniently and rapidly sorted. The design of the plant incorporates all the latest experiences. It enables the simultaneous discharging of bananas from four ship's hatches; so that it is possible to tranship the cargo contents of a whole steamer in about eight or ten hours and to convey them to the railway trucks within the shortest imaginable time.

Equipment for Piling-up Cargo.

The second important group of mechanical quay shed equipment consists of the appliances for piling up discharged cargo. After testing various methods and devices that were found impracticable and therefore abandoned, e.g., the so-called jumping method with the aid of a shod bar, the conveyor-belt elevator method, etc., the electrically operated piling-up winch with tall curved jib of 6-ft. projection has proved the most suitable mechanism for piling up any kind of goods. It is supplied in two types of 660 and 1,320 lbs. lifting capacity respectively. The easily reversible jib, which is made of Mannesmann tubes, permits the erection of piles up to 13-ft. The lifting and turning movements are effected by means of electric power. In order to keep the price of the winches—of which very large numbers are in use—as low as possible, electric traversing gear has been dispensed with, and ordinary hand drive, which has the advantage of securing very smooth operation, has been resorted to.

In certain cases, however, a more rapid readjustment of the piling-up mechanism is required, and sometimes a combination of the work of transportation and piling-up is considered indispensable. Three types of combined appliances, consisting of an electric truck and some kind of lifting gear, have hitherto been employed in the quay sheds. The travelling cranes (electric truck and overhead traveller with slewing jib) are entirely driven by electric power, and their travelling gear is designed in such a way that they can turn round at any moment wherever they may be at the time. They possess a lifting capacity of one or two tons, and their usefulness is very varied. They are especially suitable for the handling of heavy pieces, and have contributed very considerably to the remunerative working of the Hamburg quay sheds. The only cargoes for which they are not very suitable are engines or motor cars packed in cases, and similar bulky goods. For this kind of work electrically driven lifting trucks have proved extremely helpful, and some of them are now installed in several sheds. Their platform can carry loads up to 1.8 tons, and this load can be raised to a height of 6½-ft. A slight lift is sufficient to place transport wheels underneath such cargoes. If the pieces are very large, two such trucks are used.

The Port of Hamburg—continued

Weighing Machines.

The weighing process, which used to involve a great loss of time, has been very considerably accelerated by increasing the number of weighing machines, their carrying capacities, and their general efficiency. The rule in the more modern sheds is that each is equipped with fifteen stationary weighing machines. Each shed, in addition to the usual one-ton weighing machines, is equipped with several 3 or 5-ton machines. The old decimal balances are no longer suitable for present-day requirements, and the same remark applies to the centesimal weighing machines with sliding poise which are far too slow in operation and not reliable in their results. Neither of these two types is installed any longer. The most useful machine for quay operation, which is the outcome of numerous trial experiments, is the semi-automatic combined adjustment and inclination balance. It is designed in such a manner that the approximate weight of the load (correct to the nearest 100 kilograms) is shown by a simple adjustment device, whereas the kilograms below 100 and fractional parts of a kilogram are indicated automatically by a pointer. Errors are practically impossible, and the whole process of weighing is very greatly simplified as compared with the older systems.

Coal-tipping Devices.

Among the remaining mechanical equipment used on the quays the two very up-to-date plants for the transshipment of coal from the railroad to the ship deserve special mention. They are wagon tipping devices on Kirchenpauerquai and Hofecanal respectively. The former plant is used for transferring the coal to sea-going vessels, and the latter for transferring it to barges or lighters. The most typical feature of their design is that the coal, instead of being first tipped into a chute and then into the vessel, is dropped straight into the ship's hold out of the coal truck, which is held in a slanting position far beyond the edge of the quay wall. This arrangement means that the way the coal has to travel is shortened, and that any deterioration of its quality due to crumbling (which is unavoidable when chutes are employed) is prevented as much as possible. The tipping device for seagoing vessels is equipped with a platform for the coal truck that can be raised to such a level that the coal drops straight into a funnel whose telescopic outlet can be adjusted to the height of the pile of coal that may have accumulated from time to time in the ship's hold. The force of gravity is made use of to effect the actual tipping. The whole appliance has been described as a slewing coal tip, owing to the slewing lever with which it is provided. Its efficiency is twenty coal trucks an hour. The most salient feature of the tipping device for rivercraft is that the tipping platform can be made to travel along a bridge arranged at right angles to the quay wall and projecting beyond it, so that the coal can be distributed over the whole width of the vessel or over several vessels lying alongside of one another. Thus trimming is entirely dispensed with. Tipping is effected by the provision of curved tracks for the tipping wagon carrying the coal truck on which the front rollers of the former are made to move downward, whilst the rear rollers are simultaneously caused to move upward.

Equipment used for Midstream Transshipment.

In contrast with the coal tips just described, which may be said to represent a type specially characteristic of the methods used in the Port of Hamburg, the remaining equipment for the handling of bulk goods does not, generally speaking, show any conspicuous deviation from that employed everywhere else. With the exception of the loading bridges for coal and ore which form a variety of combinations of hoisting devices, the equipment mainly consists of floating apparatus used in connection with midstream transshipment, such as floating cranes, floating steam winches, floating automatic grabs, coal elevators and grain elevators. Owing to the considerable trade in bulk goods, their number is very large, and there is much diversity of type among them. Here it must suffice to state in summary fashion that 123 floating steam winches, 26 floating cranes (whose capacities are up to 100 tons), 8 floating automatic grabs, 6 coal elevators, and 23 grain elevators are available in the Port of Hamburg, so that the existing facilities are sufficient to cope with any requirements that are likely to arise.

The Warehouses.

We now leave the subject of the equipment employed for the transshipment of goods and turn our attention to the facilities for warehousing and storing provided within the harbour area. The warehouses differ very materially from the transit sheds, the chief difference being that they are built several storeys high and that they are of solid construction throughout. The general appearance of a large section of the harbour, the "warehouse city," is dominated by them. Their fundamental design is shown in Fig. 5. Generally speaking, the depth of the warehousing rooms is 100-ft. Each consists of a basement, a ground floor, and five or six upper floors whose average

height is about 10-ft. The maximum loading capacity of each floor is 370 lbs. to the square foot. The designs of the ceilings and supports have been mainly determined by considerations connected with the risk of fire. In order to minimise the

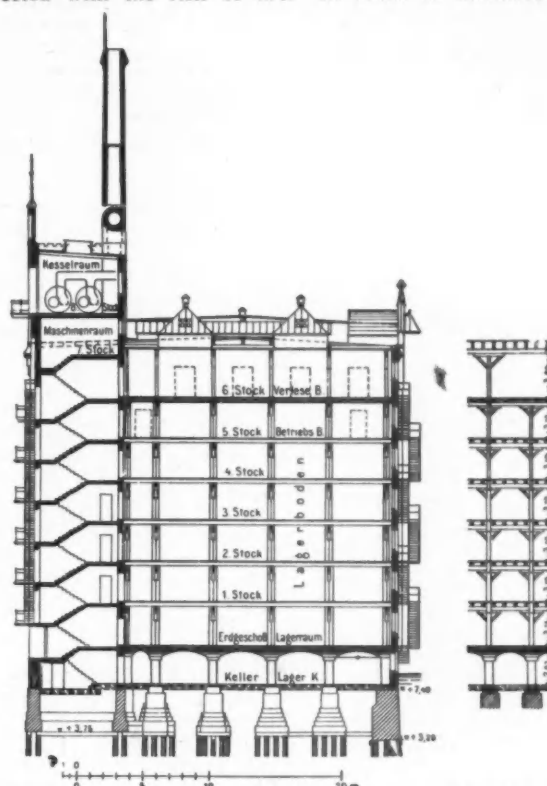


Fig. 5. Cross Section of a Warehouse of the Freihafen-Lagerhaus-Gesellschaft.

danger zones in the event of fire breaking out, no single room is allowed to exceed 4,300 square feet in floor space. Adjacent warehouses are separated from each other by fireproof walls. By means of galleries it is possible to reach one building from another, whilst fireproof spiral staircases provide safe exits to the road. In addition to the warehousing rooms, the buildings contain ample accommodation for office premises. A number of hydraulic winches, arranged above the vertical hatches, serve to transfer the storage goods from cart or lighter to the warehouse.

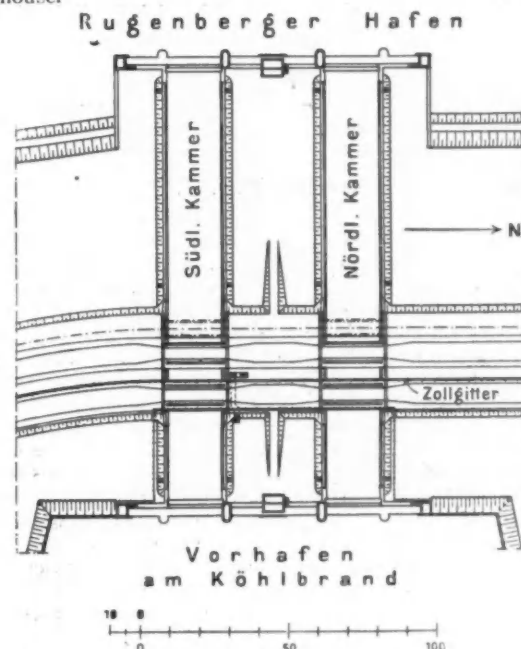


Fig. 6. Ground Plan of Rugenberger Schleusen.

The eight warehouses on Melniker Ufer and Dessauer Ufer are much lower than those in the "warehouse city." Some of them are without upper storeys altogether, and resemble the quay sheds in their general appearance. Since, however, the piles of goods in these warehouses are generally much higher than those provided with upper storeys, they have been amply equipped with mechanical devices for piling up the commodities.

The total available warehousing floor space is 132 acres, so that there is accommodation (on the basis of the maximum

The Port of Hamburg--continued

loading capacity above stated) for 1,000,000 tons of goods simultaneously. If the numerous private warehouses are included, the corresponding figures are 197 acres and 1,500,000 tons respectively.

The Locks.

The reason why six locks had to be provided in the harbour area has already been stated on a previous page where it has also been pointed out that the difference in the level of water above and below them is never more than a few inches. Consequently lock gates of a light type have been found sufficient for opening and closing the lock chambers. The latter can be moved rapidly and without much force. The increase in the measurements of successive locks has kept pace with the development of the types of vessels using them. The following data are instructive in this respect.

Name of Lock	Date of Building	Length of Chamber in feet	Width of Lock Gates in feet	Depth of Sill below M.H.W. in feet
Brookthor-Schleuse ...	1869	216	39	13
Baaken-Schleuse ...	1889	328	52	15
Grevenhof-Schleuse ...	1900	393	60	18
Ellerholz-Schleusen ...	1906	393	60	18
Muggenburger Schleusen	1906	393	60	14
Rugenberger Schleusen ...	1913	490	60	20

The Ellerholz, Muggenburger, and Rugenberger Schleusen are double locks, two single locks having been arranged parallel to one another. The gates of the older locks are provided with hydraulic drive, and those of the later ones with electric drive.

A short description of the Rugenberger Schleusen (Fig. 6) may serve to illustrate the technical principles involved. The lock crowns support the iron girders for the two lock gates. The latter are made of iron and have wooden facings. Above and below they are guided by horizontal rollers. They are suspended from the girders by means of vertical rollers. The lower portion of each gate consists of an air chamber which serves to maintain it in a more or less floating position. The lock chambers are surrounded by masonry in their lower half, which is intended to support the sloping earthwork above. The driving engines for the gates are accommodated between the two chambers. Both halves of each gate open and close simultaneously, and their movements can be regulated by a brake arrangement before they reach their final positions. Control is effected from an attendant's cabin on each of the lock crowns.

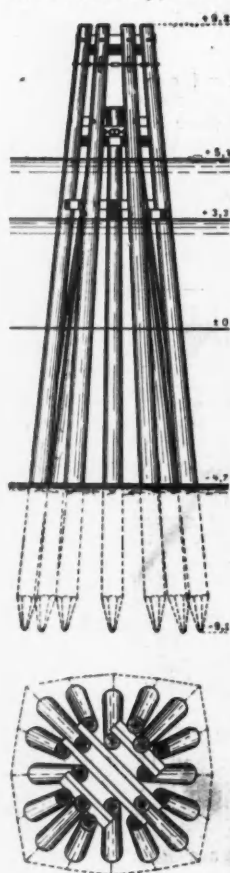


Fig. 7. Dolphin consisting of sixteen mooring posts.

The Dolphins.

Owing to the great practical importance of midstream transshipment, the dolphins or mooring posts have become one of the most conspicuous features of the harbour. The present development of dolphins may be said to have originated from the single posts used in canals and basins frequented by harbour lighters for the purpose of making fast when taking up their berths there. The dolphins provided in the basins used by the numerous up-river barges consist of two, three, or four single posts and a simple wooden connection. In the rivercraft basins their average distance from each other is about 80-ft. Groups consisting of from nine to sixteen posts (Fig. 7) are provided in the basins for sea-going vessels of light draught, whereas in those basins where sea-going vessels of deep draught are berthed, groups of twenty-four single posts are the rule. Formerly the normal arrangement was to provide one central post around which the others were grouped, but modern harbour engineering prefers two groups arranged in concentric circles without a central post. The posts forming the outer circle are less slanting than the inner ones. The wooden stiffenings and the mooring rings are fitted in such a way that all outward projections are avoided. This affords the greatest possible protection of ships

and dolphins alike against all kinds of damage. The ends of the rows of mooring posts are in some instances equipped with ice guards with iron-plated fender beams. The average distance between the groups of dolphins in the latest type of basins used by sea-going vessels is about 115-ft. Altogether there are about 8,900 single posts or dolphins, and some 25,000 posts go to their making. The total length of berthing accommodation provided with dolphins is about 46 miles.

The Landing Places.

In designing the various kinds of landing places, the fluctuations in the level of the water surface have to be taken into account. Where traffic is not very brisk and where only small-sized vessels, such as harbour launches, are concerned, landing stairs leading down to low-water level have been provided. In some instances floating booms or iron pontoons are placed before them. In the basins for rivercraft where the embankments are sloping, narrow wooden bridges connected with stairs are provided. Stairs of solid construction are also used in some parts of the quay walls lining the basins for sea-going vessels.

Simple arrangements like the foregoing, however, are inadequate where traffic is brisk. There it is necessary to establish facilities enabling numbers of persons to board or leave the vessels simultaneously. This applies in particular to the landing places of the vessels engaged in the regular ferryboat services. The method adopted in their case consists in the provision of movable bridges supported, by means of rollers, on floating pontoons. Their slope depends on the level of the water at the time in question. Wherever the available space permits, the bridge is not made to rest on the actual landing pontoon, but on another one specially provided for the purpose. By this arrangement the danger of the bridge and its sensitive bearings being injured by the bumps of the arriving steamers is greatly reduced. When the bridge pontoons have to be temporarily removed for repair, the bridge itself can be suspended from the posts. In order to avoid any dislocation of traffic on that account, provision has been generally made for movable stairways leading down to the landing stage. A special device used in their construction ensures that all the stairs retain their horizontal position whatever the angle of inclination of the whole stairway may be. The height of the landing stages above the level of the water ranges between 2-ft. 7-in. and 8-ft. They are protected from accidental damage by means of dolphins.

The details concerning the design of the landing stages on Stadtdeich used by the boats engaged on the Upper Elbe and of those on Strandquai frequented by the passengers from sea-going steamers landed there correspond to those just described.

The largest of all landing places are the St. Pauli Landing Stages. Owing to the very considerable traffic they have to cope with, they are of a type somewhat different from the others. They were constructed in 1907/1909 in that part of the harbour which has now for almost a century been the juncture of the city's local traffic and ocean-going shipping, and partly to replace an older, but much smaller structure. They are not really a number of separate landing stages, but form one solid iron structure with wooden flooring. They are 1,400-ft. long and 66-ft. wide, and are supported by 109 floating iron caissons. Their surface rises 6-ft. 4-in. above the water level. Their rear portion contains accommodation for waiting halls, offices, luggage rooms, and shops. Facilities for the landing of small launches have also been provided there.

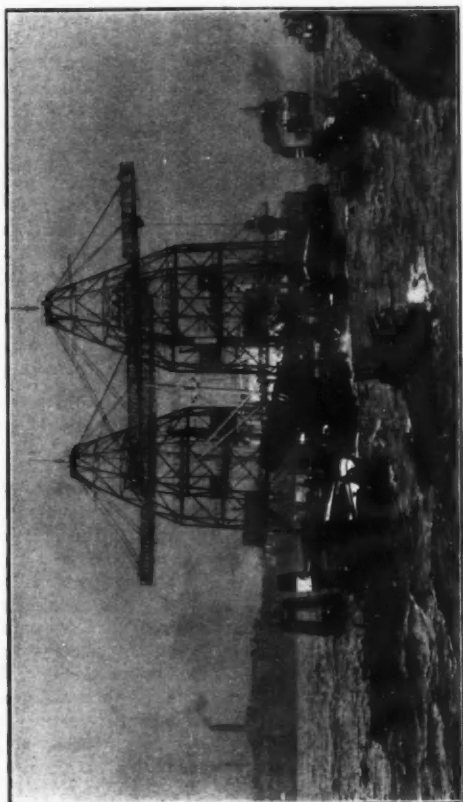
The eastern part of the St. Pauli Landing Stages carries an upper deck 660-ft. long and nearly 10-ft. high, where sea-going vessels can disembark their passengers from their promenade decks.

The shore connections consist of nine movable bridges, each of which is about 100-ft. long. Seven of them lead to the main platform, and two to the upper deck of the landing stages. The width of the bridge is about 29-ft., except that one of them is narrower. They are large enough to cope with any traffic, however considerable it may be.

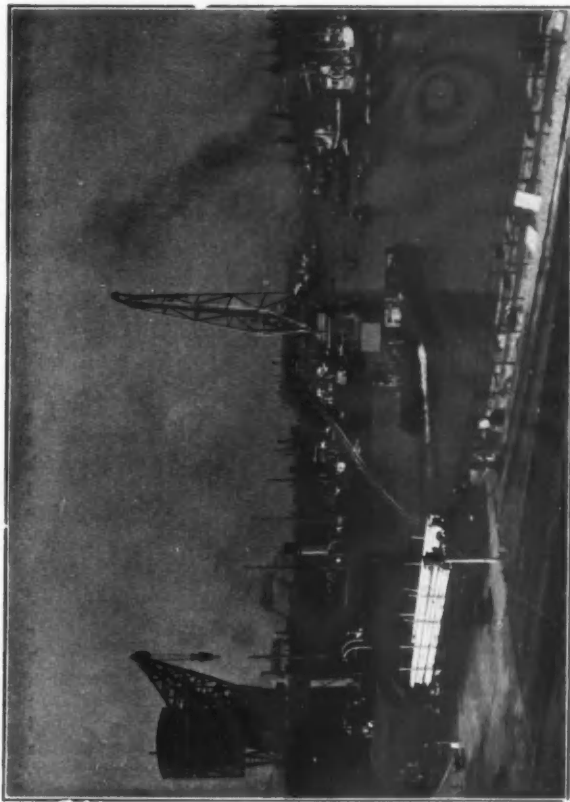
A reception building—similar, as regards the purposes it serves, to a railway reception hall—has been provided on the part of the shore directly adjacent to the Landing Stages. All the bridges are approached by passages leading through this building which contains, among others, a big cloak room, office premises, officials' quarters, booking offices, and a restaurant. Several domes surmount the various sections of the imposing building, and its eastern end has been designed as a tall clock tower equipped with a tide gauge indicating the level of the water above Normal zero expressed in decimetres, and with the light signal already described.

(To be continued)

The Port of Hamburg



Floating Crabs discharging a Steamer in Midstream.



One of the 32-ton Floating Cranes of the Government Department for Quay Administration moving with its own power in response to an order received.



Segelschiffshafen. Warehouses of the Freihafen-Lagerhaus-Gesellschaft are seen in the foreground and on the right.



Export Cargo arriving at the Quay Shed. Electric Wall Cranes with Special Coupling Mechanism are used to take it in.

Notes from the North

Mersey Tunnel: Progress Report.

IT was reported to the September meeting of the Mersey Tunnel Joint Committee that good progress is being made with the ventilation works, upon which £224,000 has now been spent. The contract for a full-size tunnel under the river has now been completed at a cost of £1,478,368, as compared with the contract amount of £1,413,601. On the Birkenhead side, £802,000, or 9 per cent. above the contract amount, has been expended. The fixing of lighting fittings, 526 in number, is complete, and work is proceeding on the footpath and gunite rendering. The Liverpool sections have been completed to the extent of 99 per cent. at a cost of £666,000. The concrete filling, footpath construction, and lighting fittings, 520 in number, are finished, and the gunite rendering is being continued. Eighty-seven per cent. of the reinforced concrete roadway has been accomplished at a cost of £335,000. Altogether 380 men are still employed. The committee has accepted tenders for a supply of instruments for recording visibility and monoxide gas in the tunnel, and also for wiring for electric light and power.

Factory Extensions.

Messrs. Wingrove and Rogers, Ltd., of Liverpool, are manufacturers of electric battery trucks for special purposes and amongst their latest deliveries are bale pilers. The truck carries a movable jib on which is mounted a pair of jaws; one hoist motor operates both jib and jaws. Extensions are at the present time being carried out at the works of Messrs. Wingrove and Rogers, Old Swan, Liverpool.

Institute of Transport.

An interesting syllabus has been compiled of the winter meetings of the Manchester and Liverpool section of the Institute of Transport, the first meeting being on Wednesday, 28th September, when the members visited the works of the Chloride Electrical Storage Co., of Clifton Junction, and partook of luncheon as the guests of the company at the Midland Hotel, Manchester. The Committee is to be congratulated on having included in the syllabus one subject dealing with dock and harbour questions, arrangements having been made for Mr. H. A. Reed, C.E., consulting engineer of the Manchester Ship Canal Co., to speak on "Cargo-handling Appliances" on 27th January next.

New Egremont Ferry Pier.

Wallasey Corporation has accepted the tender of £7,340 from Messrs. Dorman Long and Co., for the repair of Egremont pier which was damaged when struck by an oil tanker four months ago. This sets at rest the rumour that Egremont Ferry might be permanently closed. There was a long discussion at the Town Council meeting on the future of Egremont Ferry, objectors to the continuance of which held that it is unnecessary, and that the heavy annual loss involved cannot be justified. The chief argument of those who favoured the maintenance of the central ferry is that, if it is not greatly used, it should be retained as a reserve in case of any serious mishap at Seacombe, and also for the convenience of residents in the Egremont and Liscard districts. In view of the fact that the claim of the Corporation against the owners of the colliding steamer and the insurance company had not been settled, the Council's debate took place behind closed doors. It has been suggested that there is now presented an exceptional opportunity not merely to rebuild but re-construct Egremont Pier, thereby making it more attractive alike to natives and visitors. New foundations will have to be made in any case, and they can be made to carry a covered-in deck in lieu of the exposed type of pier, which has in the past been one of the chief objections to Egremont from the passengers' point of view.

Unusual Dock Accident.

There was an unusual accident at Duke's Dock, Liverpool, last month (September). A steam-wagon, in manoeuvring towards a warehouse, plunged backwards and dropped into the dock. The driver was dragged down in his cabin and was momentarily under water, but managed to clutch a wire and haul himself to the surface. His mate jumped clear before the wagon fell. The lorry, loaded with rice meal, was later lifted on to the dock quay by the Mersey Docks and Harbour Board floating crane Titan, after a diver had made descents to fix wire hawsers to it. Later in the day the level of water in the dock was lowered some feet to permit of an inspection of the steam wagon, and when the water withdrew, it was revealed that, in falling, the trailer part had turned completely round, so that the back-end was next to the cabin.

Caernarvon Harbour Trust.

At the monthly meeting of the Caernarvon Harbour Trust, the abstract of the receipt of harbour dues showed that the amount received in July and August was £288, as against £262 for the corresponding period of last year. The shipment of slates during July and August amounted to 16,965 tons as compared with 13,550 tons for the same months in 1931. On the receipt of a certificate from the engineer, it was agreed to pay to Mr. Owen Morris, the contractor, £35 on account of the new harbour extension works.

Honour for Manchester Engineer.

Mr. Henry Ashman Reed, consulting engineer to the Manchester Ship Canal Company, has been appointed a British representative on the International Commission of Navigation Congresses, to serve on a special committee of the International Commission which is to compile a technical dictionary of navigation in several languages. The dictionary will include the words and phrases used in most parts of the world, in association with the sea and with rivers and canals, with maritime and river works, docks and harbours, and their design, construction, and maintenance.

Retirement of Dock Board Official.

One of the principal officials of the Mersey Docks and Harbour Board, Major Arthur Dranfield, the treasurer to the Board, who has held that position since 1917, retired at the end of September. Major Dranfield has spent the whole of his service of over half-a-century with the Board in the one department, which he joined as a boy. On the formation some years ago of the Dock Board's Staff Guild for the advancement of the social amenities of the staff, Major Dranfield was its first treasurer, and he has taken a very active interest in its development and progress. He is a brother of the late Mr. D. Dranfield, who was secretary of the Cunard Company. Mr. R. J. Wallace, who has been assistant treasurer for several years and prior to that principal receiver of rates and dues, is to take up the position of treasurer in succession to Major Dranfield, while Mr. W. E. Moseley will succeed Mr. Wallace as assistant treasurer.

Ribble Bursts its Banks.

Owing to the overflowing of the banks of the river Ribble during recent heavy rains, it became necessary immediately to put in hand the making of sandbags with which to build up a river bank at Preston at the points where the river broke over the banks. The boulevard near Walton Bridge was flooded to a depth of two feet, and later in the morning a pumping machine was brought into use at bungalows on the boulevard, where the water was over a foot deep.

Liverpool Shipping Changes.

At the end of September, Messrs. David MacIver and Co., whose vessels have sailed from Liverpool for a century, closed their offices. Their fleet, which, with the vessels of the Nelson Lines and the R.M.S.P. Meat Transports, Ltd., has been merged into the Royal Mail Lines, and are now being operated locally from the offices of the Pacific Steam Navigation Company. Mr. Alan MacIver continues to be identified with the management of the fleet. Mr. Charles Livingstone, the oldest director of D. MacIver and Co., continues as a director under the new scheme.

Transport Men's Fears.

The council of the Liverpool Shipping and Forwarding Agents' Association (Inc.), having considered the report of the conference on road and rail transport, adopted a resolution expressing the opinion that any further increase in the taxation of heavy vehicles employed exclusively in port areas, and particularly in the case of Liverpool, which, owing to its peculiar position, is very largely dependent upon such vehicles for the transport of goods between the docks, railways, and warehouses, is undesirable, and protesting most strongly against any such increase being made. Copies of this resolution are being sent to the Minister of Transport, Mersey Docks and Harbour Board, and local members of Parliament.

Ship Canal Company to Borrow £350,000.

Manchester Ship Canal Company has obtained the consent of the Manchester Corporation to the borrowing by the Company of the sum of £350,000. The application is made in accordance with section 4, subsection (3) of the Manchester Ship Canal Act, 1925, which provides that the Canal Company may only borrow the sums under the sub-section with the consent of the Corporation from time to time.

*Notes from the North—continued***Dock Scales and Weights.**

Mr. Francis J. Bundy, chief inspector of weights and measures to the Liverpool Corporation, states the number of weights, measures and weighing machines examined on the dock estate for both the Mersey Docks and Harbour Board and for private firms, was 11,765, of which 8,400 were correct and 3,300 required adjusting. As regards weighing instruments, 947 were examined, 833 found correct and 114 required adjusting.

Damage to Sea Defence Wall.

Several thousands of pounds worth of damage was caused to the unfinished portion of the new sea defence wall at New Brighton, by high tides and storms. The finished portion of the wall between the Red Noses and Atherton Street with its massive concrete masonry which is 40-ft. deep from coping to foundation, with a base of some 16-ft. to 20-ft., mostly of solid rock, withstood the fury of the gale.

The damage done was to the iron piles, the bases of which are driven down 14-ft., and between which the concrete is placed, the piles being then withdrawn as the concrete blocks solidify. For a distance of about 200 yards from the finished portion of the wall towards the Perch Rock Battery at the point where the new open-air swimming baths will be constructed, the piles were twisted and bent, some of them, with the supporting timbers, being dragged out and thrown upon the shore. These piles will now be useless for the purpose, and a fresh supply will have to be obtained. For some days there was a partial suspension of work. A new 150-ft. wide promenade behind the sea defence wall is being constructed between the Red Noses and Portland Street.

Repairs to Banks of Mersey.

Portions of the southern bank of the River Mersey, about 200 yards on the downstream side of Princess Road Bridge, Manchester, are in a poor state of repair. The rubble wall has been washed away in places and the earth filling behind eroded to a considerable depth. The portions of the river bank requiring repairs extend to about 180 yards and adjoin land belonging to the Wythenshawe Committee. Owing to the urgency of the work, and the desirability of executing it whilst the weather is favourable, the work had been put in hand at once. Provision for repairs to the banks was made in the current year's estimates to an amount of £500, but this has proved insufficient.

Manchester Ship Canal Company.

The monthly traffic return of the Manchester Ship Canal Co. shows that receipts during August totalled £81,215, as against £91,588 in August 1931, and £12,897 less than in July. The total is the smallest for any month since February, 1931, and the decrease as compared with the corresponding month of the previous year is the largest since July last year. Nevertheless, the first eight months of this year have included five in which there were increases as compared with 1931, so that the total receipts for the period, at £771,406, is only £5,882 less than that for the first eight months of last year. There is normally a sharp decline in receipts between July and August and two factors have probably tended to accentuate the decline this year. In the first place, although in the season ended July 31 last imports of raw cotton exceeded those of the previous season by over 150,000 bales, or nearly 25 per cent., during August they were nearly 8,000 bales, or over 20 per cent. less than in August last year. The labour position in Lancashire and the firmness of basis in the United States no doubt help to account for this change.

Pier Head Ventilating Station.

One of the architectural features of the Pier Head, Liverpool, will be the building which will accommodate the ventilating and control station at St. George's Dock; this, of course, being one of the six ventilation buildings to serve the Mersey Tunnel. Designed by Mr. J. Rouse, architect to Mersey Tunnel Joint Committee, the building will be surmounted by a tower 200-ft. high, this to be on an axis with the dome of the Dock Board Offices, and will be constructed of Portland stone. The building will accommodate a number of the big electric fans which are to extract foul air from the tunnel by suction and drive fresh air into the great subway through separate concrete ducts. Longitudinal shafts running through the tunnel will deliver 2,750,000 cubic feet of fresh air per minute. There will be duplicate stand-by shafts which, if necessary will double the capacity mentioned. Fresh air will travel inwards at a rate of from forty to fifty miles per hour, and foul air will be simultaneously expelled. The fans housed in the six stations will be twenty-nine in number, of which eighteen will be blowing and eleven exhaust fans.

"Samson's" Big Lift.

There was cleared from the Vittoria Wharf, Birkenhead, recently a 220-ton multiple spindle plane milling machine, the largest in the world, destined for Japan. This huge piece of machinery, 60-ft. long, 24-ft. high and 26-ft. wide, was transferred to the Japanese steamer "Dakar Maru" by the Mersey Dock Board's floating crane, "Samson."

A Busy Dock.

Bromborough Dock, which is owned by Lever Bros., Ltd., has been very busy lately and in a recent week every berth was occupied. Since the dock was opened in February last year, 255 vessels have passed in and out, of which 120 were ocean-going steamers and the others coastwise vessels.

Dry-Docking Record at Liverpool.

The s.s. "Duchess of Bedford" (owners, Canadian Pacific Steamships, Ltd.) entered the Gladstone Graving Dock at 2.58 p.m. on September 13th for the purpose of examination of ship's bottom. The vessel was on the blocks at 4.25 p.m. and the dock dried at 6.15 p.m. The examination was made and the water run into the dock at 7.55 p.m. The vessel floated at 8.35 p.m. and left the graving dock at 9.40 p.m. and passed to the company's berth in Gladstone Branch Dock No. 1, the period from the time of entering to the time of leaving the graving dock being 6 hours 42 minutes.

Dock Board Pilotage.

For a long time there has been contention between the Mersey Docks and Harbour Board and the Liverpool shipowners as to the necessity or otherwise of the Point Lynas Pilotage Station, Anglesey, which is controlled by the Board. The Mersey Docks and Harbour Board is, of course, the pilotage authority for the Liverpool district, which embraces the river Mersey up to a line drawn from Speke Perch, on the Lancashire side, to Eastham Locks on the Cheshire side, and all the sea and channels leading thereto or therefrom, within an area bounded by the Isle of Man, and two imaginary straight lines drawn, one from the north coast of Anglesey, through Middle Mouse Island to the Calf of Man, and the other from the Point of Ayre, in the Isle of Man, to St. Bees Head, Cumberland. The Point Lynas pilotage station is on the north side of the Isle of Anglesey, and is the outer limit for inward pilotage. It is about sixty miles from Liverpool.

Several times in the last few years there has been controversy on the question of the Point Lynas Station, but the balance of opinion was adverse to its abolition. A section of the Liverpool Steam Owners Association, however, has not ceased to call for the abolition of the Western Pilotage Station (Port Lynas) and for the pilotage to begin and end in the vicinity of the Bar of the river Mersey. Consideration of the proposals showed an extensive divergence of opinion among the members of the Association, and ultimately a poll was taken which resulted in a majority in favour of the retention of the station. Later the Liverpool Steam Ship Owners' Association declared that, "By a large majority they had come to the conclusion that the Western Pilotage Station at Point Lynas could, with complete safety, of economy and the better working of the Port, be abolished. They felt that matters at the Bar could be so arranged as to enable the pilotage area to begin and end there, without danger or difficulty to shipping." A deputation of shipowners then represented to the Pilotage Committee of the Dock Board that the time had come for the abolition of Point Lynas pilotage station.

Recently at a meeting of the Pilotage Committee of the Board the subject was debated in all its bearings. Although no detailed information is forthcoming, it is now considered not improbable that sooner or later the decision then reached will be followed by an alteration of the Mersey pilotage arrangements, which have for so long provided that a pilot boat be permanently stationed off Point Lynas. The pilots maintain, that owing to the open and exposed position at the Liverpool Bar, it is not in the general interests of shipping that the Lynas station should be abolished. Under certain conditions of weather vessels cannot be boarded at the Liverpool Bar, and as this would be bound to entail delay and inconvenience, particularly to passenger vessels, the economies claimed by the shipowners would be offset by the loss which would be bound to ensue. The pilots claim that owing to the less sheltered conditions at the Bar, there would undoubtedly be a greater personal risk in boarding ships during bad weather, not only to the pilots themselves, but also to the crews of the pilot vessels. During times of fog, the Point Lynas station performs the important duty of dividing the traffic as between inward and outward vessels, and this lessens the risk of congestion at the Bar. A pronouncement by the Dock Board is awaited with interest.

Scottish Harbour Notes

Reconstruction of North Pier, Lossiemouth.

OWING to the action of heavy seas the North Pier, Lossiemouth, has been undermined to such an extent that extensive reconstruction work has had to be undertaken. This work is now being carried out under the supervision of a Fishery Board engineer, and it is expected that operations will continue for about two months. As a result of this scheme the North Pier will be placed in a position to withstand heavy seas, and incidentally the scheme is providing a certain amount of work for local labour. The execution of this reconstruction scheme had been mooted from time to time, and locally there is considerable satisfaction that this work has now been placed under way.

Improvements at Anstruther nearly Completed.

Important alterations are now almost completed at Anstruther Pier at an estimated cost, it is stated, of about £20,000. The West Pier has been widened so that carting will be greatly facilitated during the herring fishing season, and a considerable portion of the harbour fairway has been taken up by the extensions. The Harbour Commissioners find that two drifters abreast will have difficulty in negotiating the same bank, and they have decided to begin a levelling scheme. They have accordingly petitioned the Fishery Board for a further grant, and it is estimated that £800 would make a satisfactory clearance in the harbour. With these improvements and the prospect of a new motor lifeboat in the spring this port will now prove of great benefit to Fife fishing.

Montrose Harbour Trustees.

At a recent meeting of Montrose Harbour Trustees the report by the collector stated that shore dues collected in the month of August amounted to £387, as against £409 in the same month last year; while for the past quarter (June to August) the total collections were £854, as against £896 in the corresponding quarter last year. This represents a decrease in revenue over the three months of £42. It was intimated at this meeting that—following consideration by the Trustees of the question of interest on the loans of the harbour—the bondholders had been circulated regarding a proposal to reduce the rate to 4 per cent. as from November next.

New Harbour at Nairn Completed.

Friday, September 30th, was provisionally fixed for the official opening of the new harbour at Nairn, which cost the sum of £47,000. This work has been in course of execution for a lengthy period and its completion, it is hoped, will enable Nairn to enter upon a period of increased prosperity. Three

years ago Sir Alexander Grant, Bart., loaned the sum of £26,000 to the town (free of interest) to enable an immediate start to be made on the new harbour works, and in recognition of this thoughtful act Lady Grant has been invited to perform the opening ceremony. On the same day Sir Alexander will be admitted as a Burgess of the Royal Burgh of Nairn.

Improvements at North and South Queensferry.

It is announced by the L.N.E.R. Company that they have under consideration a further improvement in the facilities at the piers at North and South Queensferry, and work which is now being authorised (and is being put in hand forthwith) will so improve the piers as to permit of the Forth ferry steamer being operated independent of the tide. Much of the work involved is of a difficult nature and, being under water, will require to be done by divers; while such work as may be accessible at low water will only be possible for a very few hours at each tide. With favourable weather conditions, however, it is anticipated that operations may be completed about the beginning of November next. The work at South Queensferry Pier—which comparatively will be more extensive and difficult—has been let under contract to Messrs. Sir William Arrol and Co., Ltd., Glasgow, which firm carried out the previous extension of that pier.

Keppel Pier to be Repaired at a Cost of £6,000.

Millport Town Council has now approved of a scheme for the repair of Keppel Pier at a cost of £6,000. Various alternative schemes were considered by the civic authorities, and the final selection of this scheme (which gives a guarantee of twenty years) has the approval of the steamer authorities. The present pier was built forty-four years ago, and within the last ten years the sum of £2,200 has been spent keeping it in order. There was a strong feeling in some quarters that this was an opportune time to build an entirely new pier, but this proposal was finally vetoed on financial grounds. It is understood that a memorandum prepared by a well-known engineer is to be submitted to the Board of Trade, and the Bute Estate pointed out that the repairs to the existing pier are necessary for the requirements of traffic for the use of larger steamers and also on account of the general condition of the present structure.

Clyde Trust Collector Retires.

After an unbroken service of 56 years, the collector to the Clyde Trust, Mr. R. Pollock M'Kell, retired at the end of September, having entered the service of the Trust in November, 1876. Mr. M'Kell has been collector since July, 1923. He is succeeded by Mr. Alexander Kerr, who has served 27 years in the Collectors' Department.

The Port of London Authority

London's Shipping.

During the week ended September 2nd, 1,010 vessels representing 812,900 net registered tons used the Port of London; 417 vessels (627,097 net registered tons) were to and from Colonial and foreign ports, and 593 vessels (185,803 net registered tons) were engaged in coastwise traffic.

During the week ended September 9th, 1,076 vessels, representing 943,146 net registered tons, used the Port of London; 437 vessels (750,795 net registered tons) were to and from Colonial and foreign ports and 639 vessels (192,351 net registered tons) were engaged in coastwise traffic.

During the week ended September 16th, 1,017 vessels, representing 901,859 net registered tons, used the Port of London, 400 vessels (643,420 net registered tons) were to and from Colonial and foreign ports and 617 vessels (258,439 net registered tons) were engaged in coastwise traffic.

During the week ended September 23rd, 976 vessels representing 858,836 net registered tons used the Port of London; 412 vessels (630,488 net registered tons) were to and from Colonial and foreign ports, and 564 vessels (228,348 net registered tons) were engaged in coastwise traffic.

Tilbury Passenger Landing Stage.

Forty-three vessels totalling 456,316 gross registered tons used the Tilbury passenger landing stage during the month of August. Altogether 7,636 passengers were embarked or disembarked at the stage, in addition to baggage and mails.

New Empire Trade for London.

A new Empire trade route for flour has been opened by the arrival in London of the s.s. "Pennyworth" from Fort Churchill, Canada. Fort Churchill, the new Hudson Bay port, is the nearest port to the United Kingdom for the grain-growing area of Canada. Consequently the flour which is being discharged in the Royal Victoria Dock was the most recently milled yet to arrive in London. The "Pennyworth's" cargo also included consignments of oats and oatmeal.

Port of London Charges Revised: Many Reduced Rates.

The Port of London Authority have issued a revised and simplified schedule of export charges on goods for shipment to take effect from October 1st. In many instances rates have been reduced. All rates are now on a tonnage basis, the previous system of charging some descriptions of goods on measurement or package having been dispensed with. Variation of rates in respect of the same commodity in alternative forms of packing (i.e., cases or drums) has been abolished as far as practicable.

A feature of the new schedule is the provision for large consignments to receive substantial reduction on the standard tonnage rates.

To facilitate handling on arrival at the docks consignors will in future be required to lodge separate Shipping Notes in respect of consignments to each port irrespective of whether or not two or more consignments are for conveyance by the same ship.

The revised schedule applies to goods tendered for shipment at the Port of London Authority's docks and the Tilbury cargo jetty, and copies of the revised export schedule can be obtained on application to the Port Authority, Trinity Square, E.C.3.

